

# Collaborative Evaluation & Research Group

Supporting Innovative Research and Evaluation



**BUILDING HEALTHY AND  
RESILIENT COMMUNITIES  
THROUGH SERVICE EQUITY  
PROJECT EVALUATION**

**JUNE 2022**

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FEDERATION UNIVERSITY  
COLLABORATIVE EVALUATION &  
RESEARCH GROUP

SUPPORTING INNOVATIVE RESEARCH AND EVALUATION

BUILDING HEALTHY AND RESILIENT  
COMMUNITIES THROUGH SERVICE  
EQUITY

Identifying an appropriate and achievable health service  
model for the Errinundra to Snowy Communities in  
Gippsland

PROJECT EVALUATION

July 2022

## ACKNOWLEDGEMENTS

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The Collaborative Evaluation and Research Group (CERG) Federation University Gippsland, acknowledges Aboriginal and Torres Strait Islander people as the traditional owners and custodians of the land, sea and nations and pay our respect to elders, past, present and emerging. The CERG further acknowledges our commitment to working respectfully to honour their ongoing cultural and spiritual connections to this country.

The CERG would like to acknowledge the Latrobe Health Innovation Zone (LHIZ) for funding the development of the CERG and for its ongoing support.

The CERG would like to thank the Deddick Valley Isolated Community Group (DVICG) and the Errinundra to Snowy Community Recovery Committee (ESCRC) for their support and contribution to the activity of the evaluation to inform the health needs and best model of health care response for the district. The community's warm welcome and country hospitality made us feel welcome and enabled the evaluation team to converse with the local community to develop an understanding of the issues around health service delivery in East Gippsland. The CERG would like to thank Eleni McIlroy, the project manager for her guidance and expertise during the evaluation.

## ABOUT THE AUTHOR

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The Collaborative Evaluation and Research Group (CERG) Federation University Gippsland is an innovative initiative that aims to build evaluation capacity and expertise within Gippsland. As a local provider the CERG understands the value of listening to the community and has the ability to deliver timely and sustainable evaluations that are tailored to the needs of a wide variety of organisations.

Associate Professor Joanne Porter is the Director of the CERG. Joanne has led a number of successful research projects and evaluations in conjunction with local industry partners. She has guided the development of the CERG since its formation in 2018.

The team that evaluated Building Healthy and Resilient Communities through Service Equity Project included:

- Associate Professor Joanne Porter
- Megan Jackson
- Naomi Cruz
- Val Prokopiv



*Associate Professor  
Joanne Porter*

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## 1. EXECUTIVE SUMMARY

### 1.1 INTRODUCTION

The Deddick Valley Isolated Community Group (DVICG) and the Errinundra to Snowy Community Recovery Committee (ESCRC) received a grant for Stage 1 of the “Building Healthy and Resilient Communities Through Service Equity” project. Funded by the East Gippsland Community Foundation and the Foundation for Rural and Regional Renewal (FRRR), the project aims to provide sustainable solutions for health service delivery in the Errinundra to Snowy district. According to the Errinundra to Snowy District Community Plan 2019<sup>1</sup>, only one in five respondents to a community survey agreed that they have adequate access to healthcare services in the district. The project will pilot two health service hub facilities for the Tubbut and Goongerah communities to improve access to services. The model will include the redevelopment of existing community rooms to provide access via digital platforms for health service delivery with the provision of nurse practitioner/s.

The Collaborative Evaluation and Research Group (CERG) at Federation was commissioned to work in partnership with the DVICG and ESCRC committees to explore possible health service delivery models by gathering data from multiple sources to inform future recommendations. The data collection was conducted from March – June 2022 and consisted of a community survey, community interviews and stakeholder interviews. In addition, a comprehensive review of the literature was conducted to inform the project. Data collected previously by the then mental health outreach nurse was also analysed and reported.

Important to the background of the project was a significant body of work conducted by the Gippsland Primary Health Network (Gippsland PHN) to inform future health and service delivery across Gippsland. The Health Needs Assessment (HNA)<sup>2</sup> conducted by the Gippsland PHN in November 2021 aimed to help inform population health planning and the future activities of the Gippsland PHN. The HNA identified 16 priorities for 2022 – 2025 that are relevant for this evaluation and the needs of Errinundra to Snowy district of Gippsland and included; the prevalence of chronic disease, aging populations, digital health and access to care that meets people’s needs. The HNA gathered data through a community survey, interviews of community members and stakeholders and submitted stories. A total of 1383 surveys were collected from which 28% lived in East Gippsland. It should be noted that there was no distinction between regional centres in East Gippsland compared to rural and remote communities and as such the findings of the HNA should be viewed with this in mind.

There were a number of significant findings of the HNA which relate to the current evaluation. It was identified that it was important to have consistency of care with a central general practitioner (GP) or clinic available;

*“Having the same doctor and keeping the same doctor for a long time”*

Communities in the Errinundra to Snowy district, however, do not have a GP and have relied on the services of a mental health outreach nurse funded by Gippsland PHN and employed by Orbost Regional Health. The funding, however, for the outreach health nurse has recently ceased, the HNA has been cited as the source of confirmation that the service is no longer needed. Although not explicitly stated in the report, the funding for the nurse ceased after five years of health service delivery to the communities in far East Gippsland. Throughout the document, however, there are

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<sup>1</sup> Errinundra to Snowy District Community Plan 2019 <https://www.eastgippsland.vic.gov.au/community-plans/errinundra-to-snowy-sub-district>

<sup>2</sup> Gippsland PHN 2022 – 2025 Health Needs Assessment. Approved and released on the Gippsland PHN website. Nov 2021.

examples of areas of concern for vulnerable populations in more remote areas of East Gippsland, for example the ageing population with a prevalence of chronic disease.

As stated in the HNA report East Gippsland survey respondents, in comparison to the Victorian State average were

- Less likely to use a smart phone / smart device or a desktop computer
- Less likely to have reliable internet access and
- Less likely to have someone to ask for help if they have technical issue.

## 1.2 KEY FINDINGS AND IMPLICATIONS

The analysis of the community survey and thematic analysis of interviews with community members and stakeholders conducted by CERG support the findings of the HNA. Additionally access logistics continue to create barriers, for example difficulty getting GP appointments and extended waiting times, cost of travel and distance to healthcare, transport to and from services, healthcare staff shortages, limited access to technology, health professional care and access to allied health professionals.

*“People are kind, but generally, specialists are completely ignorant of the rural situation, and the inconvenience some of their recommendations and appointments have.”*

A total of 81% of the community survey respondents had over time delayed seeking medical help due to travel times and costs. Often needing to travel at least 200km to the nearest health service with poor road conditions meant that for many, the time taken to attend a doctor’s visit had a significant impact on their daily life. Most participants identified that a trip to the GP meant a full day away from home and workplace. Respondents also identified cross-border issues, with a perceived discord between Victoria and New South Wales (NSW) and no clear agreements as to service provision.

*“...we've had some pretty bad accidents up there in the last two years, and it's been a fight between the ambulance in Victoria and the ambulance in New South Wales. And usually, we just get people helicoptered out because they're usually pretty badly injured. So it's a real concern...” (P8).*

Equitable access to health care services was clearly highlighted by community members. Access to safe and appropriate services was outlined as a basic human right for all Australians, regardless of where they live:

*“...it doesn't matter where you live in Australia, you have as much right to services as anybody else, whether they be health or education or police or whatever they are. And to keep on saying your statistics or your numbers of people in your community or whatever they are don't warrant that service, is untrue. Because a person is a person no matter where they live.” (P7)*

Digital health solutions alone, however, are not enough to ensure that communities such as those in the Errinundra to Snowy District are provided with the health service delivery that they need. A reliable digital platform and service needs to be supported by a consistent health professional to ensure that residents are provided with a quality health service.

A health professional working in the community can provide a variety of services such as emergency care, ongoing chronic disease management, health assessments, referral to specialists, support for specialist treatment plans while improving health and digital literacy. They can also provide assistance to access digital telehealth while providing advice, support and essential healthcare. A health

professional located in rural and remote communities was highlighted as the key to a successful health service model.

*“Safe effective health care into remote communities is absolutely doable.... the health professional is number one if you don’t have a health professional you don’t have a health service....”*

A review of the current Australian literature concluded that telehealth or mobile models were ideal for supporting rural and remote community health needs. The models provided a faster, more cost effective and appropriate service based on health trends within the communities (Cherry et al., 2018; Lesjak et al., 2010; O'Hara & Jackson, 2017; O'Sullivan et al., 2019). Cost analysis of services concluded that savings occurred from patient and specialist travel, aeromedical retrievals, equipment and staffing (Thaker et al., 2013). A notable feature for the identified telehealth and mobile models was the presence or facilitation of service by a health professional. Clients accessing the services outlined in the literature were not required to attend the service without the support of a health care professional, highlighting that their presence may assist in the appropriate delivery of care.

### 1.3 KEY RECOMMENDATIONS

1. A health professional is essential to the success of a health service delivery model in rural and remote communities.
  - a. Health professionals provide placed-based community care supporting the health and wellbeing of rural and remote residents
  - b. A health professional can provide continuity of care and plays an important role in health promotion, preventative, and primary care activities
  - c. A health professional is a vital link between primary and tertiary healthcare services, specialist services and supporting of chronic disease management plans.
2. Digital health care is an essential addition to a rural and remote health service improving and maintaining accessibility to healthcare appointments.
  - a. Digital health appointments used in conjunction with in-person consultations provide rural communities with opportunities to access specialist advice in a timely manner.
  - b. Digital health needs to be supported by adequate connectivity to support the system infrastructure.
  - c. A central location to house the digital health technologies will improve the connectivity of the service and reduce the risk of disruptions during telehealth appointments
  - d. Digital health technologies reduce the costs associated with travelling to specialist health care for patients thus reducing interruptions to work and family commitments.



# Building Healthy And Resilient Communities Through Service Equity

The **Deddick Valley Isolated Community Group (DVICG)** and the **Errinundra to Snowy Community Recovery Committee (ESCRC)** received a grant to deliver Stage 1 of the **“Building Healthy and Resilient Communities Through Service Equity”** project. The project aims to **provide sustainable solutions for health service delivery** in the **Errinundra to Snowy** district. The project will **pilot two health service hub facilities** for the **Tubbut and Goongerah** communities to **improve access to services**. This infographic shows the **result of discussions and data collection** with local community, outlining gaps in service delivery and needs of the district.

## Remote location

- Errinundra to Snowy District



Population of **338**



**40%** of survey respondents **travel 2-3 hours** to see a GP



*“Haven’t been able to build a trusting relationship with a local doctor as there is so much change over”.*

**81%** of survey respondents had over time **delayed seeking medical help** due to **travel times and costs.**

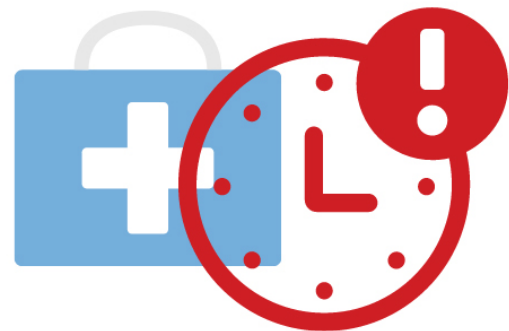
## Ideal health service delivery:

**67%**

Preferred a **physical GP on site at a clinic close by** to them

**77%**

Have **never** had a **telehealth appointment** and will require support to access this service



**48%** wanted local health service delivery on a **weekly basis**



*“A regular nurse who is able to liaise and connect us with other services via outreach and visits of specialists. More government support to remote regional area instead of the slow stripping away of services”.*



**FRRR**  
Foundation for Rural  
Regional Renewal



EAST GIPPSLAND  
**Community  
Foundation**

## 2 INTRODUCTION: BUILDING HEALTHY AND RESILIENT COMMUNITIES THROUGH SERVICE EQUITY

### 2.1 INTRODUCTION

The Deddick Valley Isolated Community Group (DVICG) and the Errinundra to Snowy Community Recovery Committee (ESCRC) received a grant of \$55,000 from the East Gippsland Community Foundation to deliver Stage 1 of the “Building Healthy and Resilient Communities Through Service Equity” project. The Foundation for Rural and Regional Renewal (FRRR) funded an additional \$24,680.

The project aims to provide sustainable solutions for health service delivery in the Errinundra to Snowy district. According to the Errinundra to Snowy District Community Plan 2019<sup>1</sup>, only one in five respondents to a community survey agree that they have adequate access to healthcare services in the district. The project will pilot two health service hub facilities for the Tubbut and Goongerah communities to improve access to services. The model will include the redevelopment of existing community rooms to provide access via digital platforms for health service delivery with the provision of nursing services.

The Collaborative Evaluation and Research Group (CERG) at Federation University was commissioned to work in partnership with the DVICG and ESCRC committees to explore possible health service delivery models by gathering data from multiple sources to inform future recommendations. The data collection was conducted from March – June 2022 and consisted of a community survey, community interviews and stakeholder interviews. In addition, a comprehensive review of the literature was conducted to inform the project. Data collected previously by the then mental health outreach nurse, Birgit Schaedler from Orbost Regional Health, was also analysed and reported.

Important to the background of the project was a significant body of work conducted by the Gippsland PHN to inform future health and service delivery across Gippsland. The Health Needs Assessment (HNA)<sup>2</sup> conducted by the Gippsland PHN in November 2021 aimed to help inform population health planning and the future activities of the Gippsland PHN. The HNA identified 16 priorities for 2022 – 2025 that are relevant for this evaluation and the needs of Errinundra to Snowy District of Gippsland included; the prevalence of chronic disease, ageing populations, digital health and access to care that meets people’s needs. The HNA gathered data through a community survey, interviews of community members and stakeholders and submitted stories. A total of 1383 surveys were collected from across Gippsland of which 28% lived in East Gippsland. It should be noted that there was no distinction between regional centres in East Gippsland compared to rural and remote communities and as such the findings of the HNA should be viewed with this in mind.

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As stated in the HNA report East Gippsland survey respondents, in comparison to the Victorian State average were

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## 2.2 THE DISTRICT

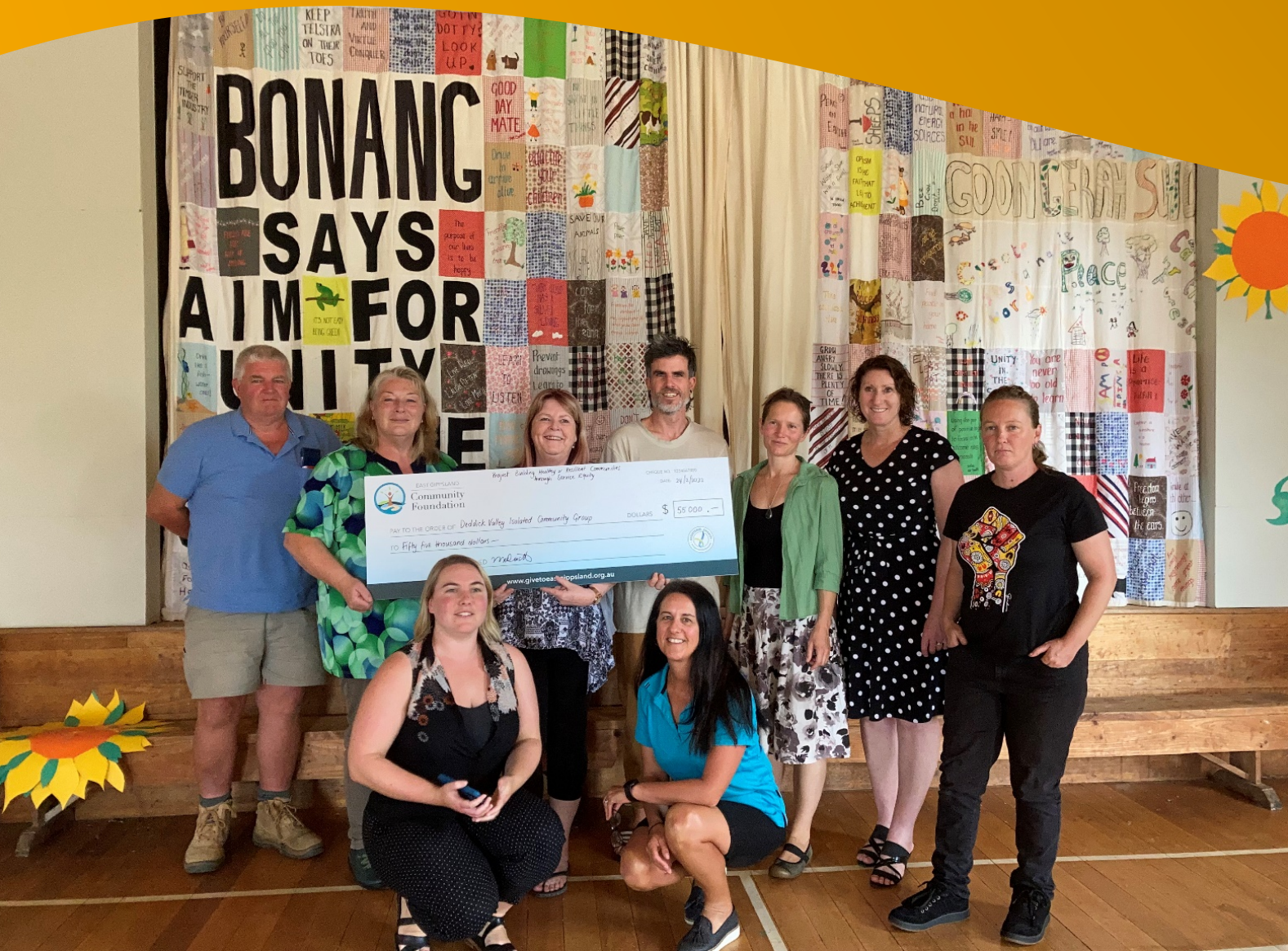
Errinundra to Snowy is treated as a sub-district by the Orbost District of East Gippsland Shire Council, with the town of Orbost providing the closest access to health services. The northernmost edge of the district is the border between Victoria and New South Wales. There is a strong relationship between the NSW towns of Delegate and Bombala, which are also important service towns for these communities. The sub-district comprises Bendoc, Bonang, Goongerah, Cabanandra, Tubbut, Deddick Valley, Haydens Bog, Delegate River and Dellicknora. The population of the Errinundra to Snowy district is 338, with 117 living in Bendoc, 46 in Bonang, 30 in Goongerah and 11 in Tubbut. The majority of residents are aged between 50 and 59 (50%) followed by 60 – 69 (25%). With regard to gender, 56% identify as female and 36% as male<sup>1</sup>. The population density (persons/km<sup>2</sup>) of East Gippsland is 2.2, compared to the Victorian State average of 27.2<sup>1</sup>.



Figure 1: Errinundra to Snowy District of Gippsland

## 2.3 PROJECT DELIVERY

The project will pilot two practitioner-led service hub facilities in Tubbut and Goongerah communities to improve access to healthcare. The operational model and feasibility will be tested with a view to future expansion in Bonang and Bendoc if successful. For the pilot, two disused school sites will be used as they have access to highspeed fibre-optic internet connections which will provide access to telehealth services, including GP appointments and specialist appointments. The aim of having a practitioner-led model in-community care can be given, including treatment, referrals, examination and diagnosis by an appropriately qualified practitioner.



Members of DVICG and ESCRC: Presentation of \$55,000 from East Gippsland Community Foundation (Community Bushfire Recovery Grant) to DVICG for the project.

### 3 THE EVALUATION

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#### 3.1 AIM OF THE EVALUATION

The aim of the evaluation was to analyse existing data and new information in support of an appropriate health service model for the Errinundra to Snowy district in East Gippsland Shire.

#### 3.2 EVALUATION RESEARCH QUESTIONS

The evaluation of Stage 1 of the project, Building Healthy and Resilient Communities Through Service Equity, addressed the following research questions:

1. What are the health service delivery needs of residents living in the Errinundra to Snowy district in East Gippsland?
2. Does a digital health hub meet the needs of communities in Errinundra to Snowy district as a health service delivery solution model?

#### 3.3 DATA COLLECTION / TOOLS USED

The evaluation of the project utilised a variety of data collection tools in a mixed methods approach which provided information about process, outcomes and impact. Quantitative and qualitative data was collected via analysis of existing data, a community survey and interviews with health professionals, project team members and the local community.

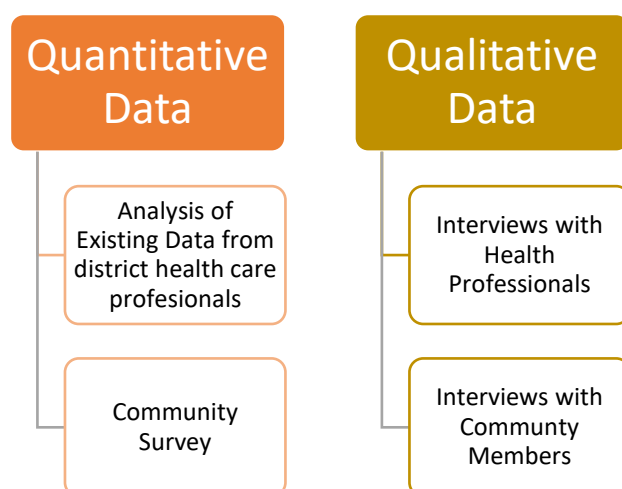


Figure 3: Data Collected

See Section 8 for Evaluation Methodology

## 4. EVALUATION FINDINGS

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### 4.1 ANALYSIS OF EXISTING DATA

Existing survey data was gathered for the Errinundra to Snowy district by Birgit Schaedler who worked as a mental health outreach nurse for Orbost Regional Health from 2014 – 2021. Birgit is to be acknowledged for her contribution to the community, working closely with them and conducting a future needs assessment survey in June 2019 to assess their service needs. The anonymous survey contained ten questions and collected basic demographic details as well as information relating to services currently attended, costs and travel. The survey also collected information related to preferences for service delivery, perceived service needs and gave respondents the ability to provide open text responses regarding why they live in the area and potential reasons for relocating away from the area.

A total of 63 people within five areas of the Errinundra to Snowy district completed the survey. Of these, the ages of respondents ranged from 18 to 89 years (average age 56.2 years). The average time living in the area was 23.04 years (range 6 months to 87 years) and 50% of respondents reported having a chronic medical condition.

#### Current service provision

Being a rural and remote area, most services are provided by way of outreach services. Survey participants were asked which services were currently available to them (see Table 1).

Current Outreach Services	
Mental Health Nurse	33
Nurse	5
Optometrist	3
House cleaner/home help	2
Library bus	2
Australia Post	2
Dentist	1
Massage	1
Neighbourhood House	1

Table 1 Current Outreach Services

Participants commented on the perceived lack of understanding of service providers;

*“People don’t understand what it’s like living way out and why service providers never come... they don’t know how far it is, they don’t care”.*

Another participant also commented; *“GPs not caring or aware of what it’s like in the bush, actually no service providers are”*. Not all respondents were aware of what services were available, however it

is acknowledged that this may be due to recent relocation to the area. The service that most respondents knew about was the mental health nurse (n=33), followed by nursing (n=5) and optometry (n=3) (Table 1).

### Services regularly attended

Of the services regularly attended by respondents, medical services (34%) allied health (26%) and non-medical services (23%) were most frequent (Figure 4).

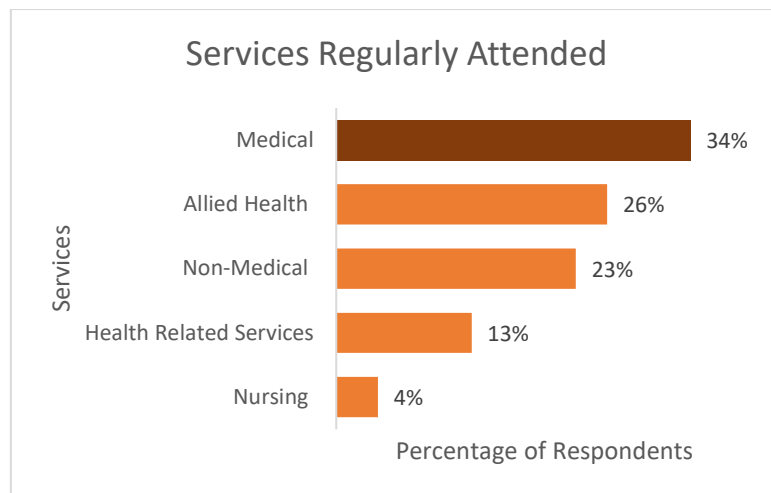


Figure 4: Services Regularly Attended

With regard to medical services, visiting the GP was the highest (n=32), followed by attending specialist appointments. Non-medical services that were accessed regularly varied, with the East Gippsland Shire Council being the highest (38%), followed by Centrelink (29%) and VicRoads or track clearing services (18%) (Figure 5).

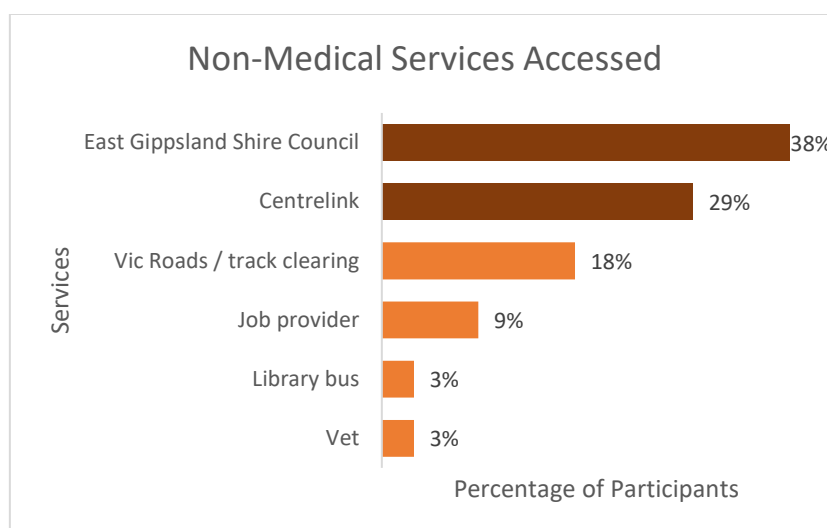


Figure 5: Non-Medical Services Accessed

The most common allied health service attended was the dentist (53%), with chiropractic (18%) and optometry (10%) also commonly reported (Figure 6). Informal health advisors included naturopathy and massage services.

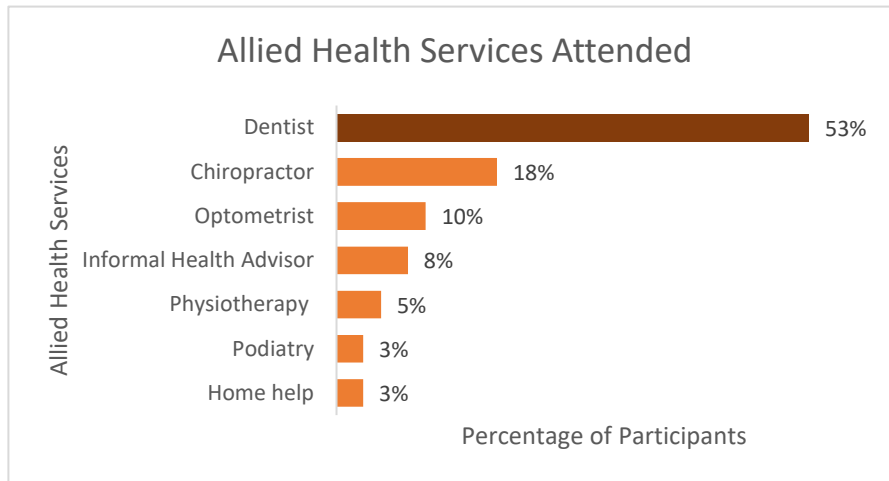


Figure 6: Allied Health Services Attended

### Costs associated with attending services

The costs associated with attending services varied, ranging from \$40 up to \$500 with 71% of respondents identifying that this caused financial strain. In terms of kilometres travelled to attend services, again the range varied, anywhere from 42km up to 1,000km. Respondents reported additional issues associated with this such as the need to take time off work, impact on increased car maintenance, wearing out vehicle tyres, as well as dangers associated in travelling along rural and remote roads. Concerns were raised about logging trucks, and speeding motorbikes as well as needing to be aware of wildlife on the road. One respondent identified a lack of empathy from services because of the issues with travel; *“we often feel ignored and punished because of judgements of organisation staff who I have heard say ‘too bad they chose to live there’”*.

### Alternatives to travelling

Respondents were asked if they would access services online. The majority of respondents said that they would be willing to (56%), however concerns were raised as to the appropriateness of online services and the need for a person to be in attendance during the consultation. Some respondents identified a lack of technological knowledge, and others thought it was not appropriate for their needs. Respondents identified that for online access a private room with good internet would need be provided, as well as assistance available if required.

When the option of accessing services face-to-face was proposed, 94% (n=59) of respondents said they would utilise this as one respondent stated, *“we should be entitled to equivalent healthcare to less remote locations”*. Regarding how often they would access services if they were available within the community twenty respondents provided further information, with half of these reporting they would access it fortnightly (Figure 7).



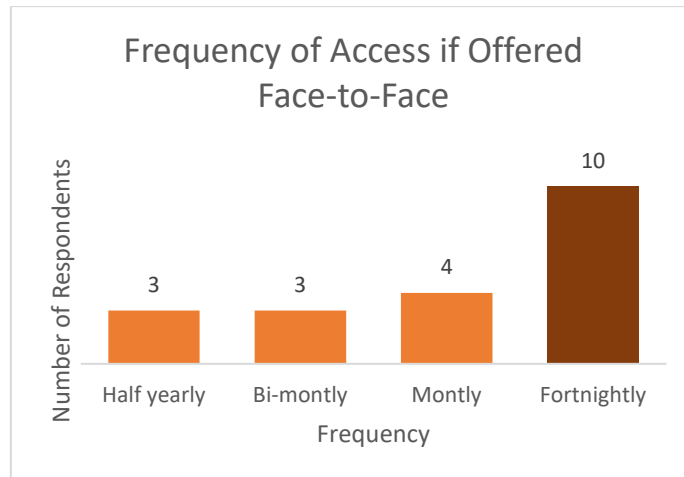


Figure 7: Frequency of Access if Offered Face-to-Face

### Service needs

Wellbeing and preventative health service needs were also assessed in the survey with respondents identifying that if available in the community they would access a variety of these (Figure 8).

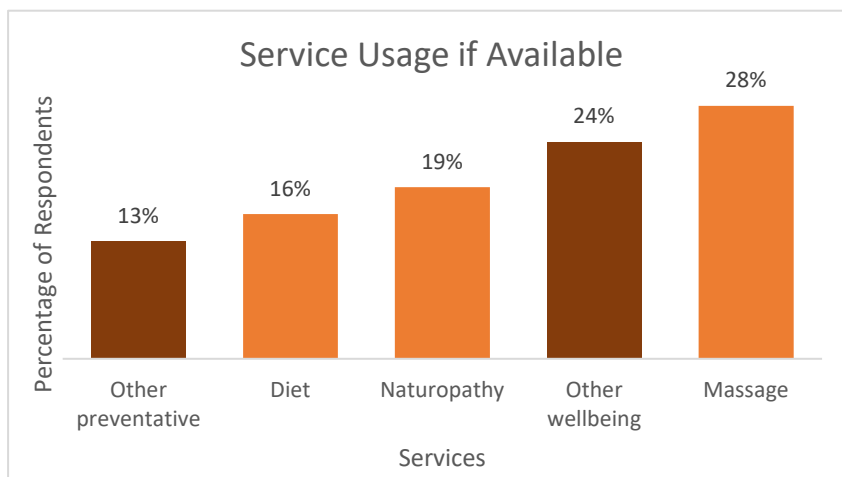


Figure 8: Service Usage if Available

The 'other wellbeing' services identified by respondents included yoga, art therapy, meditation, fitness and activity groups as well as counselling and mental health services. The 'other preventative' services identified included regular health and skin checks, optometry, chiropractic, and gendered health services (i.e., specific women's and men's health services).

### Living in a rural and remote area

People choose to live in rural and/or remote areas for a variety of reasons with respondents in this survey reporting financial reasons; *"rent too expensive in city, can't afford house in city"*, as well as for the lifestyle and peace of mind; *"Live here because it is remote, sparsely populated and away from the madness of the rest of the world – that does not interest me – I stay because I like it this way"*. A few respondents mentioned family ties to the area; *"inherited family home, enjoy living in a close, caring community"*, *"Born and bred in the area"*, *"Family been here for generations. I love it here and don't want to move"*.

Although some reported that they experienced social isolation (Figure 9), negative associations with this were not always present “[I] enjoy isolation to some degree”, “I like the isolation and beauty of this unique environment”, and “I love the seclusion, could not live in towns or cities anymore”.

Despite many respondents reporting positively on the reasons why they choose to live in the area, the impact of the lack of services available is making some re-consider remaining in the region. Health reasons and lack of services were the main reasons given for considering relocating, for example, one participant stated that there is a; “lack of services needed to maintain health” and another identifying the problem seems to be getting worse “...need more health services in general, more accessible, [service] seems to be reducing services to this vulnerable area”.

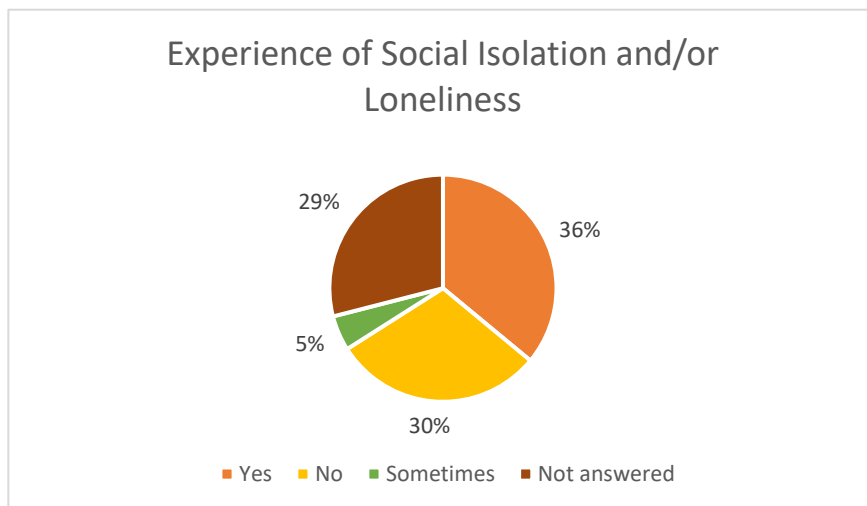


Figure 9: Experience of Social Isolation and/or Loneliness

### Discussion

The survey responses indicate that there is a lack of service provision in the Errinundra to Snowy district and this has financial as well as health and psychological impacts on those living in the area. Respondents overwhelmingly reported the lack of health services as being the main reason they would consider relocating outside of the region; however, many were reluctant to do so due to the positive attitudes about the area and the lifestyle it afforded them.

While many were open to the idea of utilising online services if made available, concerns were raised about the viability of this given the need to still have personnel on site, in addition to the lack of reliable internet and/or phone services in the area.

## 4.2: COMMUNITY SURVEY

A community survey was distributed to community members in the Errinundra to Snowy district for four weeks, between 28.04.2022 – 20.05.2022. Community members had the choice of completing the survey online or using a paper survey that was supplied by CERG with a reply-paid envelope to ensure confidentiality. A total of 55 responses were received with the majority being returned by mail. The aim of the survey was to gather information about community access to healthcare, healthcare needs and preferences.

### Demographics

A total of 45% (n=23) female, 43% (n=22) male and 12% (n=6) preferred not to say. The ages of participants ranged from 20 to 80+ with 44% (n=22) between 61 – 70 of age as seen in Figure 10 below.

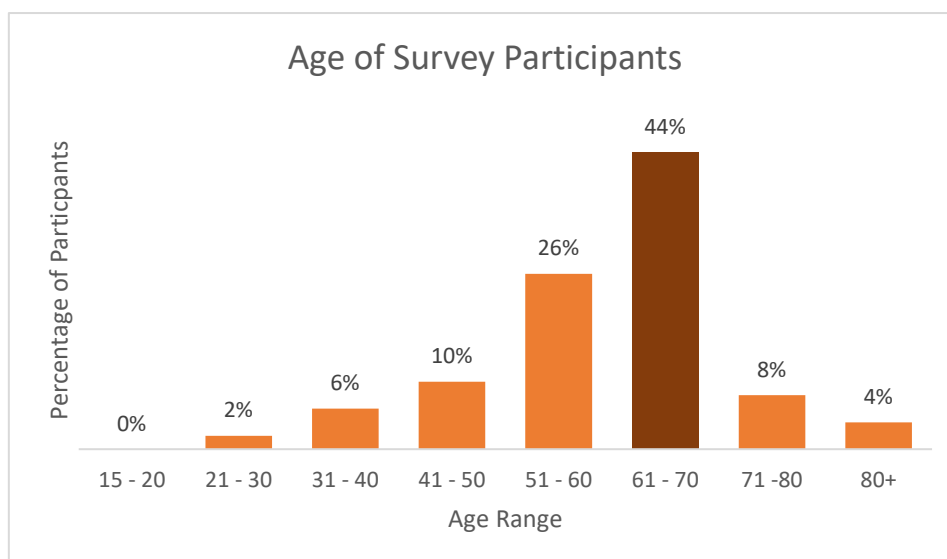


Figure 10: Age of Survey Participants

The place of residence of survey participants is shown in Figure 11 with the majority (56%, n=29) living in either Bendoc or Bonang. When asked if participants lived alone, 28% (n=14) responded yes (8 male, 6 female).

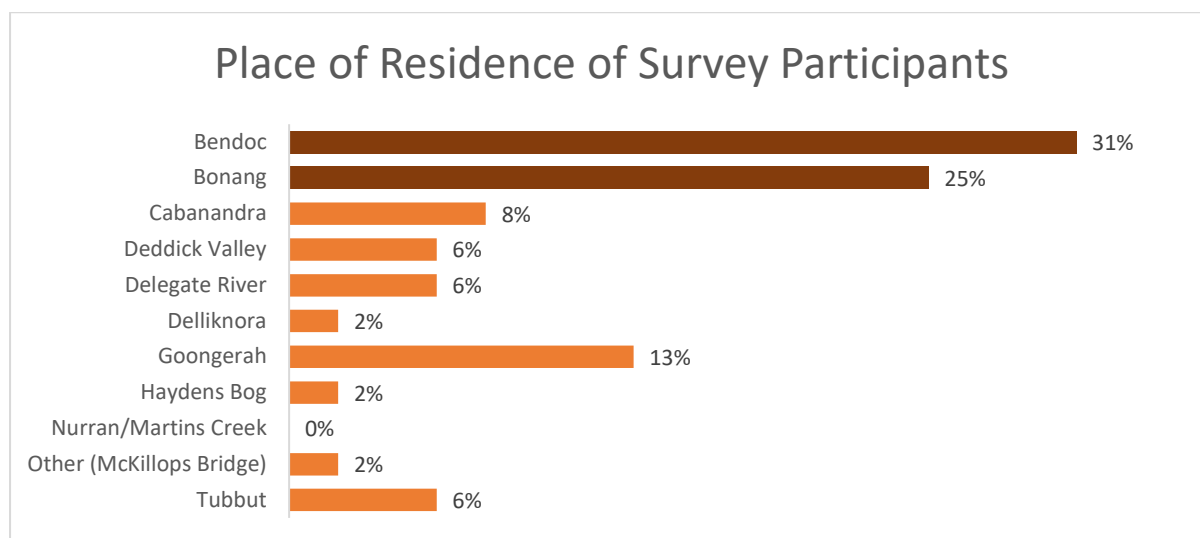


Figure 11: Place of Residence of Survey Participants

### Time travelled to see a GP

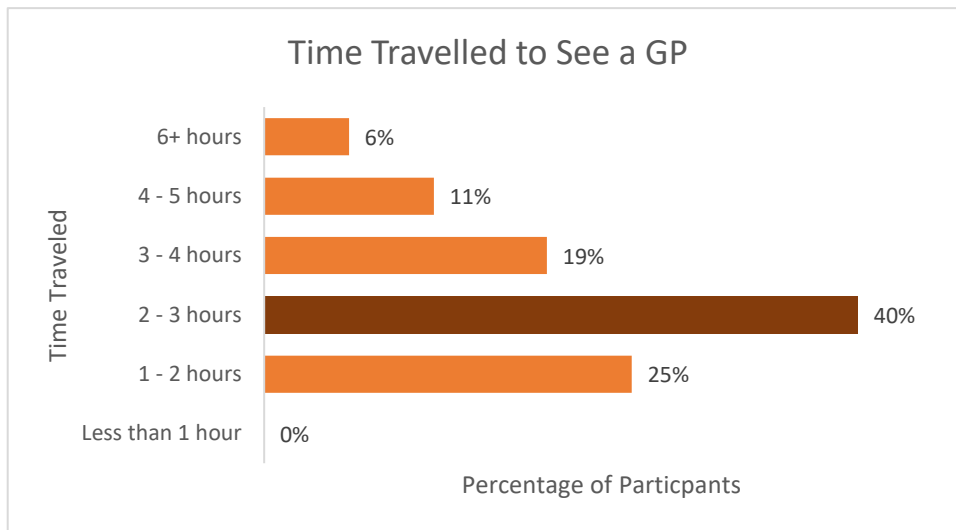


Figure 12: Time Travelled to see a GP

Participants were asked, on average, how much time (hours) was spent travelling to see a GP, with the majority of participants stating that they spent 2-3 hours travelling (40%, n=21). As depicted in Figure 12, the majority of participants spent either 1-2 hours (25%, n=21) or 3-4 hours (19%, n=10) travelling to see their GP. A small proportion of participants spent either 4-5 hours (11%, n=6) or 6+ hours (6%, n=3) travelling. Significantly, no participants spent less than 1 hour travelling to their GP.

### Waiting times for GP appointments

Participants were also asked how long they spent waiting for GP appointments. The majority of participants reported that they had to wait 1 - 3 weeks (70%, n=36). Some of the participants reported wait times of more than 3 weeks (16%, n=8) or more than 5 weeks (12%, n=6).

### Use of Telephone and Telehealth Appointments

Participants were asked to estimate their use of telephone and telehealth appointments. As depicted in Figure 13, participants reported that 51% (n=27) had 'occasionally' used telephone appointments. In contrast a total of 77% (n=21) of participants reported that they had 'never' used telehealth appointments.

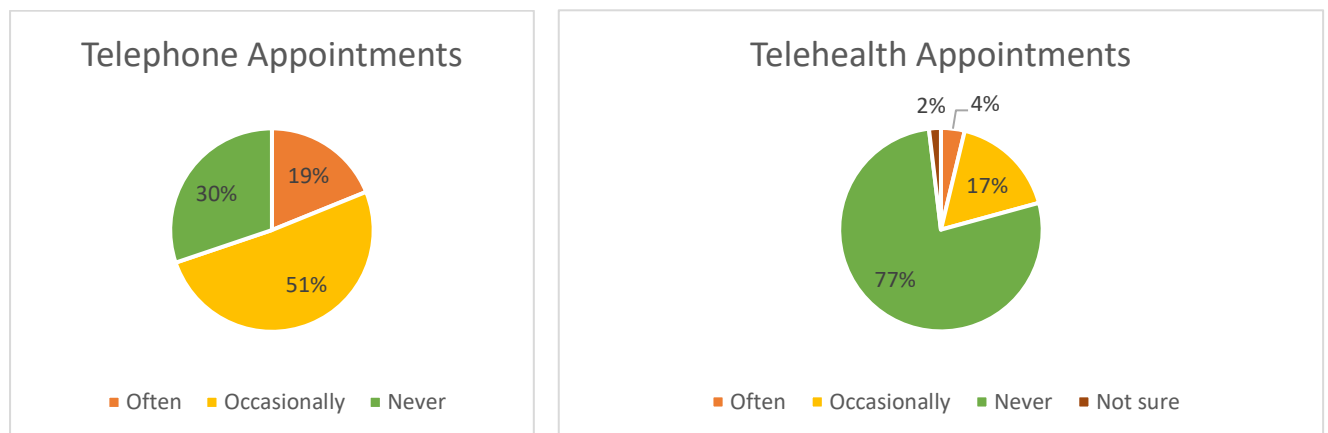


Figure 13: Use of Telephone and Telehealth Appointments

## Experience with Telephone, Video or Telehealth Appointments

Survey participants were asked to comment on their experiences of using telephone, video or telehealth services for their medical appointments. Almost all of the participants commented that a positive outcome of these types of appointments was that they did not have to travel lengthy distances to their appointments. Participants commented that telehealth saved them time as well as money due to the associated costs of fuel and/or accommodation (n= 6). Participants commented that they “[did] not having to be in a waiting room” and that they “Didn’t need to travel for simple results and uncomplicated health issues”. One participant commented that the telehealth appointments meant “No[t] losing a whole day’s work on farm”.

Survey participants commented on their negative experiences of using telephone, video or telehealth services for their medical appointments. One participant commented that they had a “sense that the GP wasn’t listening and I couldn’t ask questions”. Another participant explained that there is “no face to face to ascertain if a person looks well or not”. Explaining symptoms was difficult; “I found it hard to explain my symptoms over the phone. Would have been so much easier if I could have showed him”. In addition, participants often mentioned that the telephone service in the area was of a poor quality and there were issues with internet connections (n=7). One participant was concerned with security of information commenting that “Nothing is secure on the phone”.

Participants were asked to comment on the reasons if they had not used telephone, video or telehealth services for their medical appointments. Consistent with previous comments many participants said that they did not have the correct hardware to use such services, or their phone or internet coverage was an issue and were unable to use such type of services (n=8). Others commented that they were not aware of such services or where not offered them at all (n=6). Additionally, participants also commented that many of them preferred the face-to-face appointments (n=7) with one participant saying that they would rather “Travel to city if it is important because I like to see and speak to the doctor”, with another participant further commenting that “Much rather see someone in person for things that are important enough medically speaking”.

## Types of healthcare Needed

Participants were asked to rank the types of healthcare service providers they needed. As detailed in Figure 14 below participants predominantly reported that GP services (n=32) followed by pharmacists (n=20), nurses (n=18) and dental services (n=16) were needed. Other services that were listed included gynaecology, hearing services, oncology, podiatry, after surgery care and skin check services.



Analysis of the responses from the participants reveals that participants delayed seeking medical attention predominantly for the long distances for travel or the time it takes to get to and from the appointment (n=33). Others also commented on the expense (missing work, fuel costs, accommodation etc) involved being too costly (n=7). One participant commented that they *“Hope [the] problem goes away. Try self-treatment, [its] too hard to get to help”*. Further, another participant comments that they *“Haven’t been able to build a trusting relationship with a local doctor as there is so much change over”*.

### **Importance of Healthcare Services**

Survey participants were asked to rank a series of statements about the importance of aspects of healthcare. The ranks were; very important, important, neither important nor unimportant, unimportant, very unimportant. The results of the participants ranking of these statements is depicted in Figure 16. Of these statements the participants overwhelmingly reported that all aspects were important or very important, in particular the top statements ranked by the participants were ‘wound care services are available’, and that ‘the healthcare service is within 1 hour of my home each way’.

## Importance of Healthcare Services

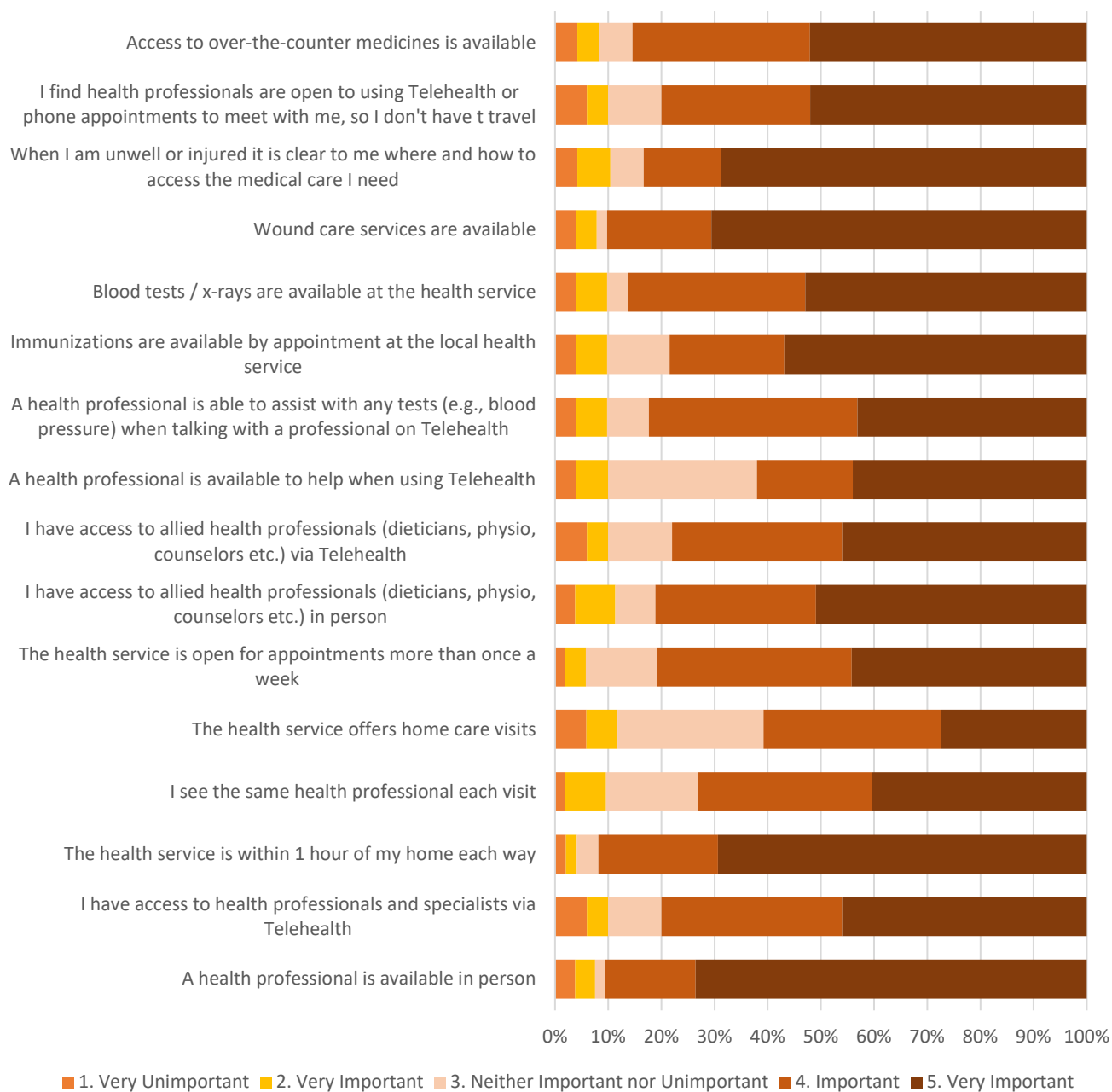


Figure 16: Importance of Healthcare Services

### Urgent and Non-Urgent Healthcare Presentations

Survey participants were asked how many times they had been required to seek urgent healthcare services in the past three years. Such services included calling an ambulance, admission to hospital or presentation at an emergency department. As depicted in Figure 17 below, the majority of participants reported that they required these services 1-3 times (44%, n=22) or less than once (38%, n=19).



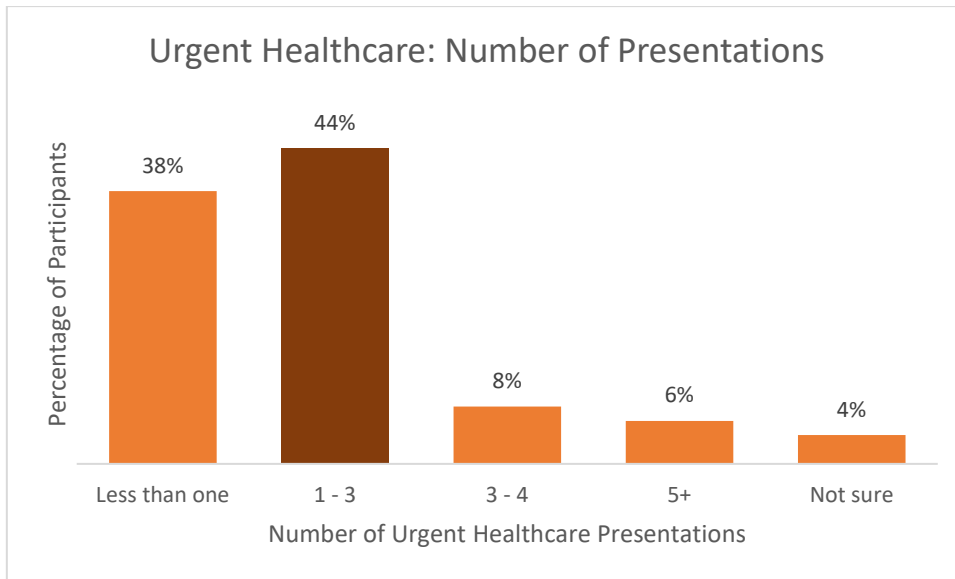


Figure 17 Number of Urgent Healthcare Presentations

The survey participants were asked how many times they had required non-urgent healthcare services in the past three years. Such services included immunization, health checks, specialist appointments, wound care, injury treatments or other mild to medium illness treatments. As detailed in Figure 18 the majority of participants reported that they required such services on average 5 or more times (56%, n=29).

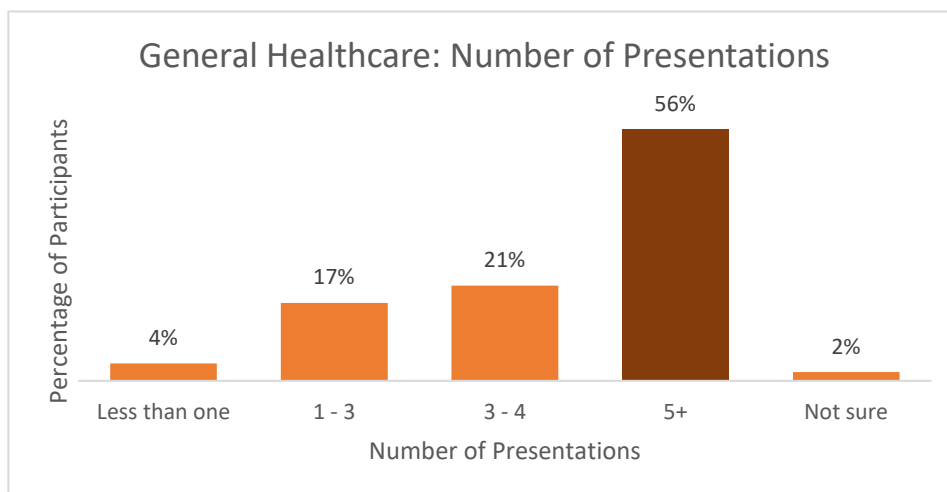


Figure 18: General Healthcare Number of Presentations

### Ability to Travel

Participants were asked how many times in the last three years they were too unwell to travel to seek medical attention due to illness or injury (but not needing to call an ambulance). Such examples may have included vomiting, injured leg or other illnesses. As shown in Figure 19, a total of 43% (n=23) reported that this had occurred less than once and a further 42% (n=22) between 1 and 3 times.

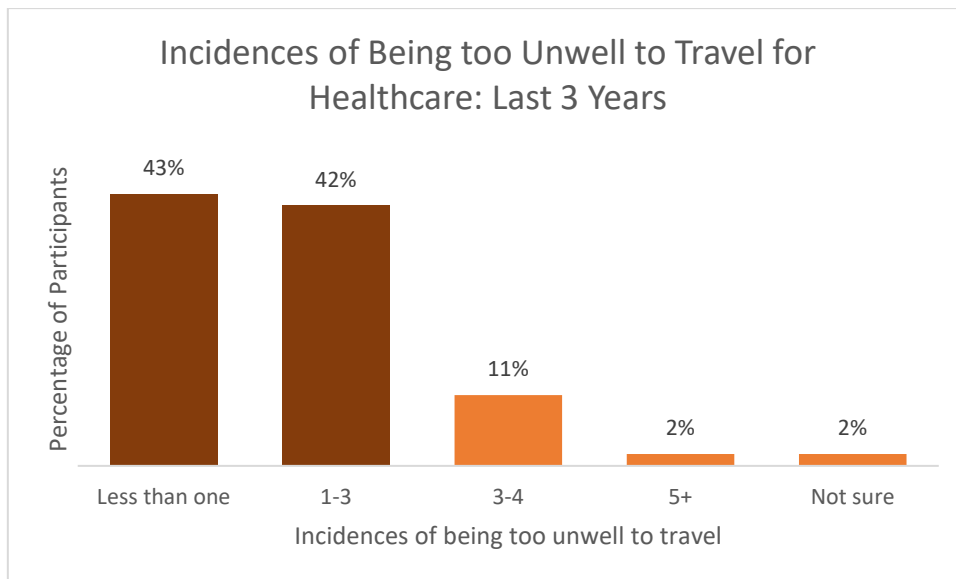


Figure 19: Incidences of Being too Unwell to Travel for Healthcare: Last Three Years

Participants were asked how they accessed healthcare services if they were too unwell to travel. The majority of participants reported that they relied on their partner, relatives, friends or neighbours to assist them in getting to such services (n=15). Others also reported that they called for an ambulance (n=7) or made use of phone advice from a nurse, pharmacist or doctor (n=6).

#### Preferences for the Delivery of Healthcare

Participants were asked to rank the order from best to least liked way to receive healthcare. A total 53% (n=26) of participants first choice was *'travelling to a town of my choice to see a doctor in person at a clinic'*. Their second choice (16%, n=8) was *'access to a doctor via telehealth using an online meeting (like a Zoom or Teams meeting) at a community facility with the help of a nurse or other health professional'* (Figure 20).

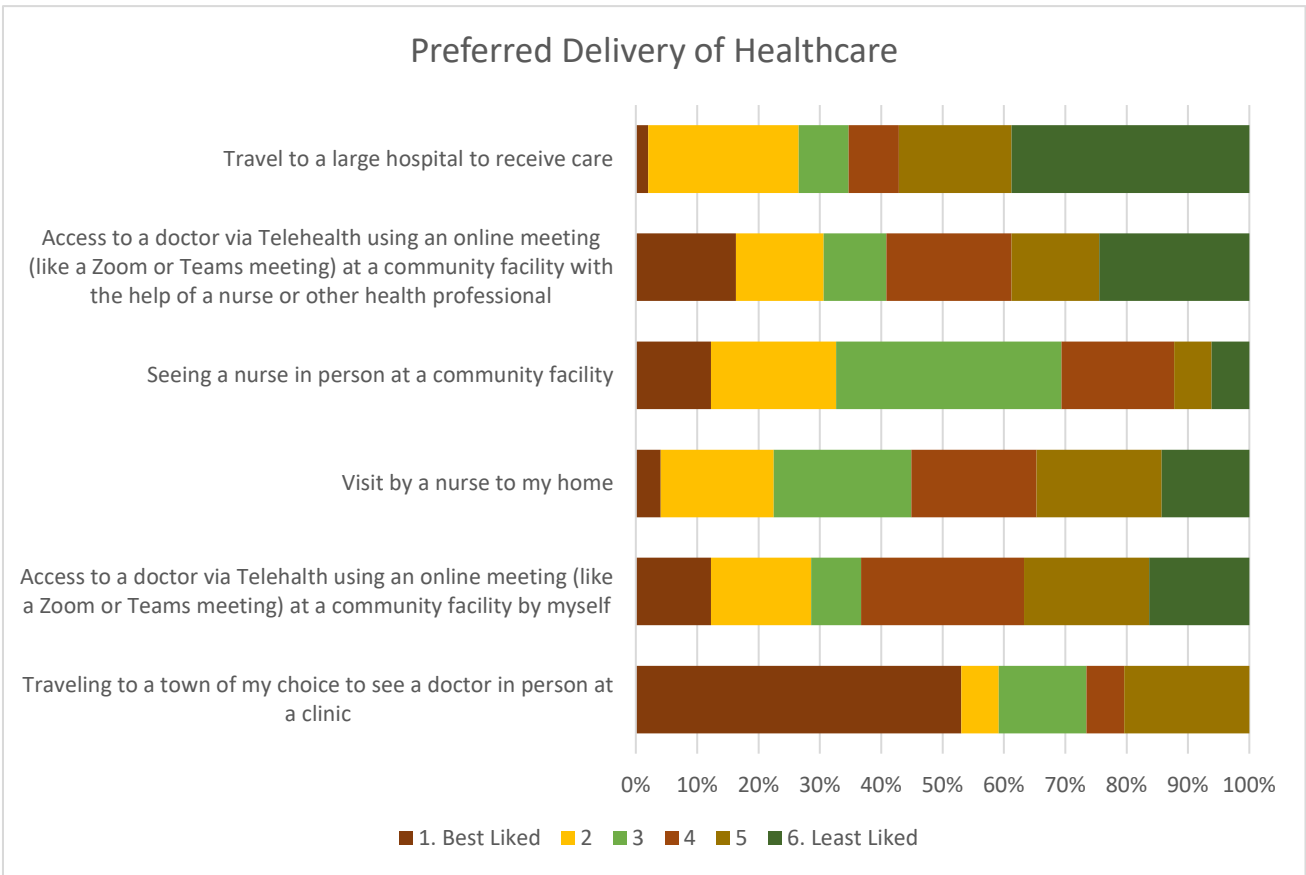


Figure 20: Receipt of Healthcare

Following this question, the survey participants were asked for their preference for the location of a telehealth centre where a health care professional would be available. As detailed in Figure 21, participants preferred Bonang (36%, n=19) followed by Bendoc (25%, n=13).

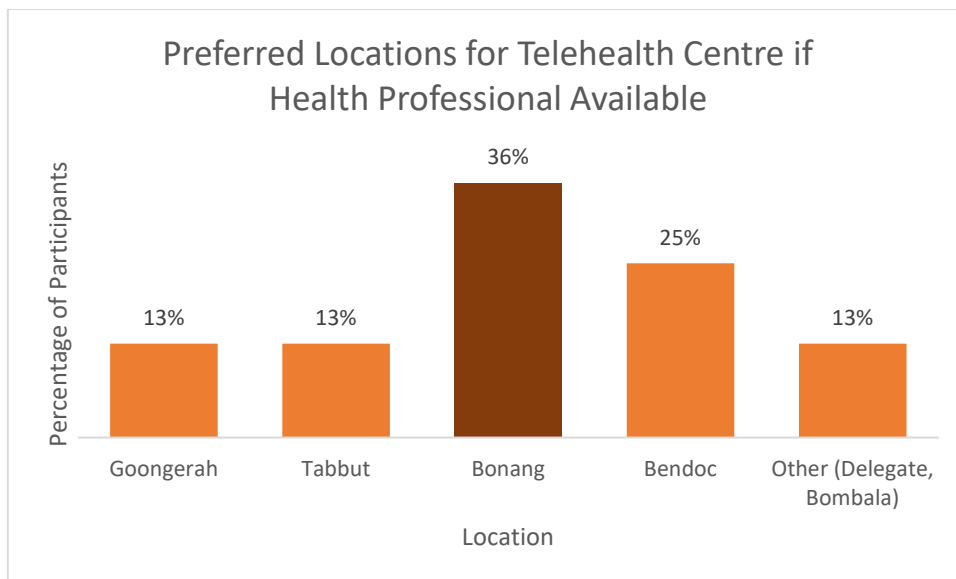


Figure 21: Preferred Locations for Telehealth Centre

Participants were asked what their ideal or suggested healthcare service delivery would look like. The majority of participants preferred a “Physical GP on site at a clinic close by to them” (67%, n=35), followed by the availability of “Telehealth services from a community facility” (17%, n=9). When asked about the ideal frequency of the preferred service delivery 48% (n=25) said weekly and 25% (n=13) fortnightly (Figure 22).

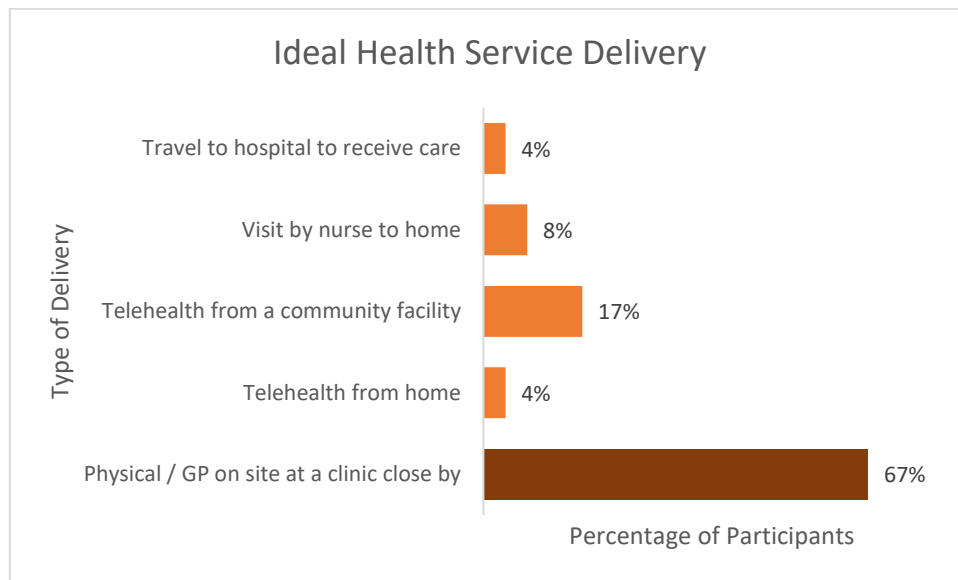


Figure 22: Ideal Health Service Delivery

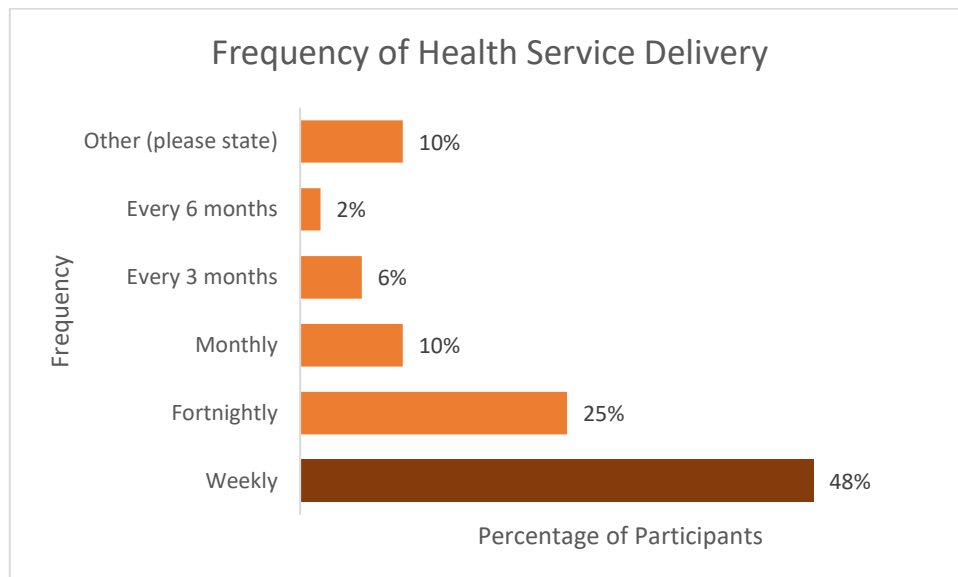


Figure 23: Frequency of Health Service Delivery

### Suggested Improvements to Healthcare

Survey participants were asked to make suggestions or comments on what would improve their healthcare experience in the region. The majority of comments from the participants were related to the inclusion of a nurse or other similarly qualified health professional stationed in the area (n=11). One participant commented that what was needed was:

*“A regular nurse who is able to liaise and connect us with other services via outreach and visits of specialists. More government support to remote regional area instead of the slow stripping away of services”.*

Participants also commented that they would prefer if a GP was also located in the area, the service was maintained and incentives were in place to encourage GPs to stay in the area; *“for years and not months”*. One participant commented that, *“A regular visit by a GP at a community facility would be ideal to cover non urgent medical conditions like prescriptions and referrals etc”*.

### **Discussion**

For many survey participants the use of telehealth was welcome as it significantly reduced travel times and costs in accessing healthcare appointments. The main issue with telehealth, however, was the technology with access to reliable internet and phone services as well as equipment seen as a barrier.

A total of 81% of survey respondents had over time delayed seeking medical help due to travel times and costs. The ideal suggested healthcare delivery for the majority of participants was access to a GP at a convenient location with telehealth appointments in a community facility with the help of a health professional highly rated.

Proposed Site of the Tubbut Service Hub



## 4.3 THEMATIC ANALYSIS OF INTERVIEWS WITH COMMUNITY MEMBERS

### INTRODUCTION

A thematic analysis was conducted of interviews of 11 community members in the Errinundra to Snowy district in East Gippsland. The interviews were transcribed verbatim and analysed using Braun and Clarke's<sup>4</sup> 6-step thematic analysis technique. Five themes emerged from the data as shown in Figure 24. Quotes from participants have been provided to support the themes. All quotes have been de-identified to maintain the confidentiality of interviewees.



Figure 25: Thematic Analysis Themes

#### Theme 1: Accessing healthcare

Interview participants identified the challenges of living in a remote area bordering two states, Victoria and New South Wales (NSW), noting the complexities with service access. Most participants mentioned that currently, there is no cross-border arrangement, which leaves residents having to travel long distances to a service within the Victoria, rather than being able to access a closer one across the border in NSW.

*"...We can't access the NSW services and most Victorian services just say well too bad, you live too far away. You know, even when we try and access something they go "well, you can come to us." And sometimes you can and sometimes you do." (P7)*

Some participants identified being able to come to an agreement with a health service so that they could receive the care they needed and overcome the issues of living in a border town.

*"I've been fortunate that I've been able to access a [health care provider] in [town] but [they're] technically not allowed to see me because I'm in the wrong state. So we have our own arrangement, you know... there's no official cross border arrangements. So [they] can only see people in [state]." (P7)*

It is acknowledged that not all residents, or services, are able to do this, and independently negotiating an informal agreement is not a feasible, nor sustainable option when it comes to healthcare services. Solutions are required to address and overcome the issues with accessing healthcare services in a cross-border region. It appears acceptable to most participants that it is not feasible to have all

healthcare services within the region, it was identified that the use of mobile health services could form part of a solution.

*"...I'm not suggesting that we should have bloody facilities for an MRI here... You know, that's kind of ridiculous. But there's got to be some better cross border arrangements, there's got to be better mobile health facilities." (P7)*

Where services could be accessed on either side of the border, participants identified significant waiting times for healthcare appointments. Reports from participants varied from five weeks up to six months depending on the type of healthcare provider required.

*"They've got a hospital that's absolutely fully stretched. And there's three doctors' practices and it's 12 weeks to give an appointment at any of them. That's just for general GP work." (P10)*

Many participants discussed the geographical challenges associated with the road conditions and how this causes accessibility issues not only for them to attend healthcare services, but also for the services to come into the area.

*"...People kind of get a bit, they get a bit wobbly about coming up into the mountains 'cause sometimes there's a bit of dirt, there's a bit of dirt roads. So they get "ohh no, I don't want to drive on dirt roads." And I don't blame them if you're not used to it but it's sort of, it's only like small patches and you just take your time. If you just take your time, it's OK. We learnt to drive on dirt roads..." (P1)*

Some participants identified that it was quicker to drive themselves rather than waiting for services to come to them. Issues were identified with getting ambulance services to the area not only due to the cross-border complexities, but also due to the road conditions faced by those unfamiliar with the area.

*"...we don't have an ambulance cover and we can't afford to insure ourselves for either healthcare or/and ambulance. So if we got a snake bite, and that's a very real possibility out here. Or we got like a fall or a break or something like that which requires something serious and quick, we would have to just drive." (P3)*

Additionally, the ageing population in the area impacts the ability to access healthcare services even when they do come to the area. Issues with the inability for everyone to drive themselves were identified and local residents were not always aware of the visiting services available.

*"...Well, if we get services to come to our local halls, we still need to get the local people to the halls. A lot of these, quite a few of these elderly people don't have vehicles anymore. They can't drive. We have to organise a little local minibus to pick them up and bring them to these, these services. It'd be really handy for them. They'd be used a lot more then. A lot of the times they just, they don't hear about the service until they've been and gone, and if they do hear about, they say well I can't go there because the neighbour who drives me is not available at that time." (P2)*

Needing to travel on average 200km to the nearest health service with poor road conditions means that for many the time taken to attend a doctor's visit has a significant impact on their daily life, with most participants identifying that a trip to the doctor means a full day away from home.

*“...there's no chance I could have driven backwards and forwards to [town]. It's a seven hour round trip. And it's not because of the hours necessarily, it's because of the condition of the road. It's a log truck road.” (P7)*

Many residents in the region have work and other commitments which influences their ability to take a full day off to go to see a GP or another health care provider. For the local community, this has wider implications, and it was pointed out that fuel is not just the only cost when you live on a working farm.

*“When you travel from here, we live on a farm where I've got animals. It wrecks your whole day... not only the cost of petrol... You have to work when you live on the land.” (P4)*

Despite these issues, participants identified that when it comes to accessing health services within the region there are positives, with many identifying the benefits of the visiting services available.

## **Theme 2: Health services that work well**

Participants identified the current visiting services as being beneficial from both a health and social perspective, with an organised health service event being a success. Local community members were able to access a number of healthcare services in one location over the course of a day.

*“...they get the medical ones from [town] to come up. Doctors and skin specialists and it was just like a big meeting thing. The Shire come and it's a good day, really. It's just a full day and they have lunch and everything there. It's a really good day out as well as you can get your moles checked and all that sort of thing.” (P5)*

Allied health services are provided to the region on a visiting basis. The Royal Flying Doctor Service (RFDS) provide dental and optical health care to the local community, which is a much needed, and appreciated, service to the area which participants would like to see extended. The service is well utilised, with participants identifying that appointments were booked well in advance.

*“The Royal Flying Doctor Service comes around and does a dental clinic twice a year. They were only here about a month ago, but... daily have about 20 appointments over the four-day period that they're here, and they're like booked months in advance. So unless you know they're coming...” (P10)*

The benefits of reminders from the visiting services were identified as being useful to ensure that residents are aware of upcoming visits and can access the service if needed. Participants identified a mobile dental service that comes to the region as being important.

*“...And once you're on the list you get like a reminder call, you know, we're coming in July... when they come to [town] they park up at the [town] community hall and they bring... it's like a bus almost, that is their mobile dental facility...” (P7).*

In addition to visiting services, telehealth provides another alternative to having to travel to access healthcare. Participants identified that prior to the pandemic, this was not an easy option to access, however with the restrictions and measures required during the pandemic, telehealth became a service they were able to utilise.

*“...with COVID, the good thing about that was they brought in telehealth. Before, “Oh no we had to see you.” But suddenly it wasn't the case. They didn't have to see us anymore. They could actually do telehealth.” (P6)*



Again, participants identified the ability to negotiate arrangements with providers to improve their access to health services. Timely access to medications is supported by a pharmacist who arranges for medications to be delivered by courier to the region, reducing the need for residents to travel to refill prescriptions.

*"There is a pharmacist in [town] and that's where I get all my medication from... [pharmacist] can send it through... And it just goes to our pharmacist and we pick it up there." (P6)*

Nursing and home support was also accessible, with participants identifying the ability to access increased services when required.

*"It's pretty good, really, we're pretty lucky. I get a house cleaner comes every week. And usually the district nurse comes, usually every fortnight but she has been coming every week as well. It's really good." (P5)*

Although almost all participants identified some positives about the current health services, and the value they placed on these were evident, participants also realised the limitations of these services and the implications.

### **Theme 3: Limitations of health service delivery**

The participants in this study identified a number of areas where improvements in health service delivery was required for the Errinundra to Snowy district. One participant considered the limitations in health service as being detrimental to the ability to provide necessary healthcare to residents, causing them to lose faith in the services available.

*"I've got no faith whatsoever, no faith whatsoever in the healthcare system in East Gippsland, none, zero." (P8)*

The difficulties of accessing services in terms of travel times, the cross-border issues and need for multiple appointments to address healthcare meant for some residents, they choose not to follow up with appointments as it becomes too difficult.

*"I've had several things that I've been having investigated but I probably won't have this investigated because I can just live with it. And it would just involve sooooo much running around that it wouldn't be worth it. It's not worth it." (P6)*

The cross-border issues were raised in the context of limitations of access to health services, with one participant discussing the discord between Victoria and NSW as to whose responsibility it was to dispatch emergency services. Understandably, this causes additional stress in an already complex situation, but also it has the potential to impact health outcomes for people who need emergency care.

*"...we've had some pretty bad accidents up there in the last two years, and it's been a fight between the ambulance in Victoria and the ambulance in New South Wales. And usually, we just get people helicoptered out because they're usually pretty badly injured. So it's a real concern..." (P8).*

Multiple participants mentioned the irregularity of services coming to the area, in particular the frequency of the optometry service was less than ideal.

*“...they also do an optometrist service. I've been here seven years and it's only been here once but nonetheless, if that could be regular, even if it was every two years to have your eyes checked.” (P7)*

Shortages and/or lack of staff available to attend to healthcare needs often resulted in referral or transfer to another service, causing delays in healthcare provision. Some participants cited this as a reason as to why they didn't access the closest multipurpose healthcare centre, as they felt it delayed treatment, therefore they chose to bypass it in favour of a larger service that was adequately staffed.

*“...we don't even bother using the [town health service] because they don't have a doctor there. They only have a few nurses, and if you go there, all they ever do is refer you on to [town] or you know, just say you need to go.” (P1)*

A lack of coordination between health care providers meant, for one participant, the need to travel to several towns multiple times a week to see specialists involved in their care.

*“...I've been going backwards and forwards to [multiple locations] now since January and that's - sometimes it's as close as 3 days apart, sometimes 4. I've done 15,000 kilometres since January to access health facilities, mostly in [town]. That's where my [specialists] are.” (P7)*

Accessibility in relation to wait times is an issue across many health services in Australia, however the ability for residents living in the Errinundra to Snowy district to access medical services is further impacted by many clinics not taking new patients.

*“Most medical surgeries have closed their books to new patients. So, and you know, that makes it very hard. I mean, I am a patient of this particular clinic and I like the doctor that I see but to have to wait for seven weeks to have a GP appointment is ridiculous. What if I was really sick?” (P7)*

While telehealth can be a suitable alternative to face-to-face appointments, it is not always an appropriate option.

*“...when I talked about the distance to services I mean all services, not just health... my GP is located at [town] which is a four hour round trip... Depending on what's going on I can do a... telehealth appointment. And that's... fine if you just need your script renewed or something like that. But if there's actually something wrong with you that doesn't work.” (P7)*

One of the other issues participants identified was closure of services within the local region, which places an even bigger strain on the ability to access healthcare services.

*“Well, they're closing everything down around here. They're busy closing down our aged care and our semi-emergency department which is just 10 minutes from me. They're busy closing it down. You're asking me what I want them to do? I don't want them to close it.” (P6)*

Accessible health services for residents in remote areas is required to support their overall health and wellbeing. It is evident from the interviews that participants are aware of the difficulties of getting health services to the area due to the remoteness, however, all participants identified the need for access to basic services, whether this was in the form of telehealth or face-to-face delivery within their area or if they had to travel to access it.

*"I'll tell you a story that happened to me... I was out at the farm... down the Snowy River. I had an accident on a farm bike and broke my leg... The guy I was working with, he packed up and took me to... the General Hospital in [town]. There was a GP on duty there. They got x-rays but they got no technician to run it, so I go to see the GP... And he said, "well, you'll need an X-ray." I said, "oh okay," he said "the next x-ray's in [town]. Get your friend to drive you... and get an X-ray." I said, "don't you get an ambulance?" He said, "oh no, you're not bad enough for an ambulance." I said okay, I'm going to [town] in a week's time. Give me a referral for an x-ray and I'll get it done in [town]. So a week later, [my partner] and I drove all the way... and then go and get an x-ray. It was broken, went straight down to outpatient and... in surgery that afternoon" (P2).*

#### **Theme 4: Community solutions for better healthcare**

When asked about what may improve access to health services, community members had a number of suggestions based on their personal experiences. Within the different options they put forward a bush nurse and the use of telehealth were most frequently recommended:

*"...when it comes to your health, I think. It's not a big ask just to have... a Bush nurse. I just think if that was the first sort of, port of call, some of the people wouldn't have the big panic and end up in a hospital." (P9)*

During times of emergency, the community noted that having a nurse or doctor close by may have provided comfort for families:

*"A [person] died out here, way further out in the bush... and there's no [services] to fly people in, obviously, which they probably would have to do anyway. But I think that you know the benefit of [the] family and that would have been nice if there was a nurse or a doctor or someone closer that could have come out." (P9)*

Telehealth and remote access to healthcare services was recognised as a potentially viable option for the isolated communities. Participants voiced that they believed although they may have the facilities to initiate this service they may need support during initial set up and use:

*"...we have the facilities, both at our neighbourhood centre and at our community hall, to do video conferencing... we're not particularly computer savvy - but if we had opportunities to have face to face video conferencing health things, I think that could be handy." (P7)*

The use of telehealth had the potential to accommodate more than just GP appointments, it could facilitate specialist medicine and allied health also:

*"...we projected that telehealth could be very advantageous for the four communities... So I think having that setting up the infrastructure for that could be beneficial. With access to allied health providers as well as GP access. Even specialist appointments that can be done via telehealth." (P11)*

Continuity of care was important for the community. Having a health care professional that knew participants health status and medical history could potentially foster trust in the delivery of care, facilitating a connection between patient and practitioner:

*“...it would be good when there would be regularly a GP coming. Hopefully the same one and not every time a different one. So I think it's important that you have your own GP who knows you and knows your lifestyle maybe. Knows what your ailments, what you had before happening to you. Because all those things I think are related to each other in health.” (P4)*

Having access to appropriate and timely care was important to the community. They thought that service was not a luxury that should be reserved for larger towns and cities: *“I'd like there to be some sort of access to a GP, you know, within, in a timely manner, not two weeks later. Not an appointment for two weeks away in even New South Wales or Victoria.” (P8)*

A desire for more focussed services was also highlighted, with mental health and gender specific healthcare service delivery suggested to better health outcomes for all community members:

*“I remember there used to be a woman who came up from [a health service]. She did Women's Health, so this was an outreach program that she used to do. And she used to come out once every three months or something like that and do pap smears and do women's checks. Checking up and stuff, things like that. The money got pulled on that.” (P1)*

The community provided a number of healthcare service delivery suggestions based on their individual and community health needs, and the infrastructure they had available to them. Community members wanted their voices to be heard, not to be forgotten simply because they were living in isolated regions. Having a strong community voice to facilitate change to policy makers was evident, with passion for their cause shining through.

### **Theme 5: Community informing policy**

Community members wanted policy makers to have an idea of the daily concerns they face when attempting to access safe and appropriate care. Walking in the shoes of the community was highlighted as key to having a deeper understanding of their needs:

*“I guess it might sound rude advice but for them to spend time in the community. Have them or their family or loved ones get crook, get sick, and go through the throes of what's involved in trying to get medical services. Then they might be thinking out of the metropolitan area a bit more.” (P12)*

Investigating healthcare models and funding structures for rural and remote communities was recognised by the community. The funding of larger organisations and acute care did not support the needs of smaller towns, who wanted a greater focus on preventative healthcare services:

*“...I actually say fund prevention services, primary care, instead of all this tertiary stuff.” (P8)*

*“Stop rerouting all of the funding to the big places and remember that people in the bush require and deserve proper health facilities and proper healthcare. Just because we're a small population doesn't mean that we should be left behind and taken off the map.” (P1)*

Without access to appropriate healthcare, community members highlighted that this may be a major reason people either don't move to the area or they relocate away. This was distressing for some, as

multiple generations of families remain in the region, yet ageing and lack of access to services may force people to leave:

*"...lots of old people that just, yeah, they moved away. They moved away. Because they can't live here with the health issues, they move to towns where there's more support which is really sad that you have to leave your family home, you know, when you get old and moving into town because there's no services here. Pretty sad." (P4)*

Participants were aware of state-wide recruitment and retention issues for health care professionals, particularly in rural and remote communities and how this impacted health service provision. One participant noted that internationally qualified health care professionals;

*"...should be welcomed with open arms and take some of the pressure off. The people are already in the industry in Australia by topping up the services they need to start incentivising people to actually go into the in the medical industry in the hospital industries, and we need more nurses. We're... always going to need more nurses, always going to need more doctors." (P10)*

Finally, equitable access to healthcare services was highlighted by community members. Access to safe and appropriate services was outlined as a basic human right for all Australians, regardless of where they live:

*"...it doesn't matter where you live in Australia, you have as much right to services as anybody else, whether they be health or education or police or whatever they are. And to keep on saying your statistics or your numbers of people in your community or whatever they are don't warrant that service, is untrue. Because a person is a person no matter where they live." (P7)*

Investigation into the health service needs of Errinundra to Snowy district communities highlighted a number of barriers and enablers to safe and equitable access to care. The participants remained optimistic and able to see some benefits and innovative practices in service provision. Facilitating a voice for community members to policy makers provided an opportunity to share personal experiences, encouraging government agencies to investigate health service access in isolated regions of Victoria.

#### 4.3: INTERVIEWS WITH STAKEHOLDERS: DISCUSSION

A total of nine stakeholder interviews were conducted independently by the lead researcher, Associate Professor Joanne Porter, to explore the current health service delivery issues faced by communities in the Errinundra to Snowy district. The interviews were conducted via a virtual meeting software package, TEAMS using a semi-structured interview technique. The interviews lasted between 20 – 50 minutes in duration. The data has been aggregated to protect the identities of the participants however due to the participants roles and rural locations it is impossible for the participants to remain completely deidentified.

The stakeholder interviews represented the following roles and organisations:

- Victorian Cross Border Commissioner
- Regional Development Victoria
- Rural and remote general practitioner
- Rural and remote general practice manager
- Bush Fire Recovery Victoria
- Royal Flying Doctors Service
- Orbost Regional Health
- Bairnsdale Regional Health Service

#### **Summary of findings**

All nine participants identified that many of the issues facing the Errinundra to Snowy district existed prior to the 2020 Bush fires which resulted in the evacuation of over 60,000 people from East Gippsland. However, because of bush fires and the subsequent impact of the COVID-19 pandemic the region experienced further disruptions and restrictions to accessing healthcare by closure of the Victorian and NSW state borders. The communities in far east Gippsland, however, continue to demonstrate resilience and remain solution focused their approach to finding ways to address the deficit in health service provision.

Workforce recruitment and retention was mentioned by a number of the stakeholders as being essential to maintaining professional health services in the region. There remain only a few isolated general practices in remote areas who provide services to a large geographical area and rural communities. There are not enough nurses, GP's and allied health professionals in the area to service the population and recruitment of staff remains challenging. To address the workforce deficits services such as the Royal Flying Doctors Service (RFDS) provide mobile annual services such as dental care. The days that the RFDS arrive are often whole of community events, however, there remains concern that notification of the service does not reach the more isolated families who have little to no internet access.

Isolated communities are relying more and more on the use of digital health services such as telehealth. There remains a need to improve the connectivity of the internet service to ensure that residents can access telehealth appointments. Digital and health literacy continues to restrict client access to health services and the client's ability to follow through on treatment plans. The need for specialists to develop an understanding of the limitations for clients to access services in isolated communities was noted. Establishing working relationships with key specialists located in metropolitan hospitals linked to local GP / nursing services provides continuity of care and also ensures that clients are supported in their treatment. Specialists visiting the region periodically also enhances the development of therapeutic relationships between health professionals and clients, making it easier to then embrace telehealth for follow up appointments.

There were a number of digital health solutions proposed to address the need for better assessment of clients which included virtual goggles that are designed to provide specialists with the ability to remotely assist the care of clients in real time. The technology is being trialled throughout East Gippsland in 2022 – 2023. However, it was noted that any technology needs to be supported by a health professional to get optimal usage.

A common theme that emerged from the stakeholder interviews related to the proximity of the state borders and the desire of individuals to be able to choose a health care service. Many residents choose to travel towards the NSW border for health care because of the better roads and variety of services. Any health service model developed should enable the consumer to choose where they receive that service. All restrictions to access needs to be eliminated and further development needs to occur to ensure that NSW and Victorian health providers are working together to provide quality healthcare to the communities living in the region.

*“Government agencies are the only ones who care about borders....finding ways of providing health services in a flexible way to those communities where the borders don’t matter because for people living in those communities the borders don’t matter”*

## 5. LITERATURE REVIEW SUMMARY

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### REMOTE HEALTH SOLUTIONS IN ISOLATED AUSTRALIAN COMMUNITIES: AN INTEGRATIVE LITERATURE REVIEW

The aim of the review was to investigate the factors that influence the feasibility and sustainability of health service provision in rural and remote communities in Australia, identifying the models of care, barriers, enablers and potential workforce solutions for isolated regions. The review was guided by a number of research questions, including ‘what is the most appropriate health service delivery model for rural and remote communities?’ and ‘what is the most feasible and sustainable telehealth model of care for rural and remote communities?’.

#### **Key findings**

A total of thirteen papers were included in the final review. The included studies had been undertaken in most states and territories across Australia, with exception of Western Australia and the Australian Capital Territory. Two overarching themes were outlined from the review findings, feasibility and sustainability. Papers allocated to the feasibility theme outlined models of care that were appropriate for isolated communities, and the barriers and enablers impacting service provision. Papers allocated to the theme of sustainability outlined long term, innovative and place-based services or initiatives for rural and remote communities. Workforce options were highlighted here, as well as costs associated with different workforce options.

#### **Discussion**

Health service provision in rural and remote Australian communities has been identified as complex. Historic issues that have impacted service delivery in isolated areas were outlined in this review, with infrastructure challenges, resource constraints, workforce recruitment and retention issues and cost concerns well documented.

It was identified in this review that a telehealth or mobile model of care may best support isolated community needs. These models provided a faster, more cost effective and appropriate service based on health trends within the communities (Cherry et al., 2018; Lesjak et al., 2010; O'Hara & Jackson, 2017; O'Sullivan et al., 2019). In a cost analysis performed by Thaker et al. (2013), a cost saving of implementing a telehealth oncology consultation service across multiple sites was approximately \$320,000. This included savings from patient and specialist travel, aeromedical retrievals, equipment and staffing (Thaker et al., 2013). A notable feature for the identified telehealth and mobile models was the presence or facilitation of service by a health professional. Clients accessing the services outlined were not required to attend the service without the support of a health care professional, highlighting that their presence may assist in the appropriate delivery of care.

#### **Conclusion**

Isolated Australian communities face a number of challenges in regard to accessing safe and appropriate healthcare compared to their metropolitan counterparts. Long-standing issues of inadequate infrastructure, unstable workforce provision, cost and time taken to access care all contribute to a decreased life expectancy for rural and remote Australians. Factors of feasibility and sustainability need to be addressed when designing an appropriate, place-based service. This review introduced models of care that have been trialled in isolated communities, outlining the barriers and enablers that make or break these models. Long-term success of implemented models was explored,



analysing workforce options and costs associated with service implementation. Telehealth and mobile models were identified as potentially the most appropriate service provision within isolated communities, with further investigation required post the COVID-19 pandemic to better understand the evolving landscape of post-Covid access to healthcare.

See Appendix 3 for the full literature review.

*\*Note that an extended literature review has been drafted and will be submitted for publication to a research journal.*

## 6. DISCUSSION AND RECOMMENDATIONS

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The discussion will focus on the two research questions that were addressed in this significant body of work to explore digital health solutions towards building healthy and resilient communities through service equity.

Research Question 1:

1. What are the health service delivery needs of residents living in the Errinundra to Snowy district in East Gippsland?

In June 2019 a future needs assessment in the form of a community survey was conducted by the district's health professional. At the time of the survey there were several outreach services provided in the region including mental health nurse, general nursing, optometry and dentistry. These outreach services provided an essential service to these remote communities. A total of 56% of the participants stated that they would access an online service if it was available however, they identified a lack of technological knowledge required to access a digital health service. The initial survey data was supported by the findings of the community survey conducted in May 2022 by the CERG.

Participants were asked to rank the types of healthcare service providers they needed. Survey participants predominantly reported that GP services (n=32) followed by pharmacists (n=20), nurses (n=18) and dental services (n=16) were needed. Other services that were listed included gynaecology, hearing services, oncology, podiatry, after surgery care and skin check services.

Participants were asked what their ideal or suggested healthcare service delivery would look like. The majority of participants preferred a *"Physical GP on site at a clinic close by to them"* (67%, n=35), followed by the availability of *"Telehealth services from a community facility"* (17%, n=9). When asked about the ideal frequency of the preferred service delivery 48% (n=25) said weekly and 25% (n=13) fortnightly. These findings were also supported by interviews with community members who identified that living close to two state borders added a level of complexity to health service delivery.

Interview participants identified the challenges of living in a remote area bordering two states, Victoria and New South Wales (NSW), noting the complexities with service access. Most participants mentioned that currently, there is no cross-border arrangement, which leaves residents having to travel long distances to a service within the Victoria, rather than being able to access a closer one across the border in NSW.

*"...We can't access the NSW services and most Victorian services just say well too bad, you live too far away. You know, even when we try and access something they go "well, you can come to us." And sometimes you can and sometimes you do." (P7)*

Continuity of care was important for the community. Having a health care professional that knew participants health status and medical history could potentially foster trust in the delivery of care, facilitating a connection between patient and practitioner:

*"...it would be good when there would be regularly a GP coming. Hopefully the same one and not every time a different one. So I think it's important that you have your own GP who knows you and knows your lifestyle maybe. Knows what your ailments, what you had before happening to you. Because all those things I think are related to each other in health." (P4)*

There was evidence that community members across far East Gippsland believed that they did not have access to adequate health care and that service delivery needed to be a hybrid of in person care and digital telehealth in order to meet the current and future health service needs of the community.

Research Question 2:

2. Does a digital health hub meet the needs of communities in the Errinundra to Snowy district as a health service delivery solution model?

A review of the current Australian literature supported the implementation of digital health technologies in rural and remote communities as a cost-effective model of care that provided opportunities to connect with specialist care in a timely and supported environment. A total of six key factors were identified in developing a feasible and sustainable service including having a clear vision, being adaptable, transparent economics, efficiency in service provision and equipment to provide the service (Bradford et al., 2016). Isolated Australian communities are most likely to benefit from telehealth solutions, however they are also the least likely to have the appropriate infrastructure, workforce and funding to facilitate the service (Liaw & Humphreys, 2006).

This was evident in the community survey results which identified that for many survey participants the use of telehealth was welcomed as it significantly reduced travel times and costs in accessing health care appointments. The main issue with telehealth, however, was the technology with access to reliable internet and phone services as well as equipment seen as a barrier. In addition to visiting services, telehealth provides another alternative to having to travel to access healthcare. Participants identified that prior to the pandemic, this was not an easy option to access, however with the restrictions and measures required during the pandemic, telehealth became a service they were able to utilise.

*“...with COVID, the good thing about that was they brought in telehealth. Before, “Oh no we had to see you.” But suddenly it wasn't the case. They didn't have to see us anymore. They could actually do telehealth.” (P6)*

Telehealth and remote access to health care services was recognised as a potentially viable option for the isolated communities. Participants voiced that they believed that although they may have the facilities to initiate this service they may need support during initial set up and use:

*“...we have the facilities, both at our neighbourhood centre and at our community hall, to do video conferencing... we're not particularly computer savvy - but if we had opportunities to have face to face video conferencing health things, I think that could be handy.” (P7)*

In order to support a digital telehealth service model in rural and remote communities the literature, community members and the stakeholders all confirmed the need for a designated health professional to be able to support the delivery of the service, provide continuity of care and to implement health management plans. A health professional was deemed essential to the success of a digital health care model in the rural community.

*“Safe effective health care into remote communities is absolutely doable.... the health professional is number one if you don't have a health professional you don't have a health service....”*

The participants remained optimistic and able to see some benefits and innovative practices in service provision. Facilitating a voice for community members to policy makers provided an opportunity to share personal experiences, encouraging government to investigate health service access in isolated regions of Victoria.

*“...when it comes to your health, I think. It's not a big ask just to have... a Bush nurse. I just think if that was the first sort of, port of call, some of the people wouldn't have the big panic and end up in a hospital.” (P9)*

## 6.1 RECOMMENDATIONS

1. A health professional is essential to the success of a health service delivery model in rural and remote communities.
  - a. Health professionals provide placed-based community care supporting the health and wellbeing of rural and remote residents
  - b. A health professional can provide continuity of care and plays an important role in health promotion, preventative, and primary care activities
  - c. A health professional is a vital link between primary and tertiary healthcare services, specialist services and supporting of chronic disease management plans.
2. Digital health care is an essential addition to a rural and remote health service improving and maintaining accessibility to healthcare appointments.
  - a. Digital health appointments used in conjunction with in-person consultations provide rural communities with opportunities to access specialist advice in a timely manner.
  - b. Digital health needs to be supported by adequate connectivity to support the system infrastructure.
  - c. A central location to house the digital health technologies will improve the connectivity of the service and reduce the risk of disruptions during telehealth appointments
  - d. Digital health technologies reduce the costs associated with travelling to specialist health care for patients thus reducing interruptions to work and family commitments.

## 7. LIMITATIONS

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There were limitations related to this evaluation that must be considered. These include:

1. Analysis of existing data: Survey data was collected prior to the commencement of the project by a health professional working in the region, therefore the integrity of the data cannot be assured.
2. Considering the geographical spread of the population of the Errinundra to Snowy district, and the short time frame (approximately 3 weeks) for responses to the Community Survey to be completed, some community members living in remote areas may not have had the opportunity to be included in either the survey or the interviews.

Despite these limitations, the evaluation is considered to present a credible assessment of the project.

## 8. METHODOLOGY

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### 8.1 CONCEPTUAL FRAMEWORK

The approach of the CERG to this evaluation was informed by a Participatory Evaluation and Co-Design Framework.

#### PARTICIPATORY EVALUATION

A participatory evaluation framework puts people from the community and those delivering the programs, projects and services at the centre of the evaluation. Participatory evaluation is a distinctive approach based on the following principals:

- That evaluation should be a co-designed, collaborative partnership through 360° stakeholder input including project participants and project funders;
- That integral to evaluation is an evaluation capacity-building focus within and across projects;
- That evaluation is a cyclical and iterative process embedded in projects from project design to program assessment;
- That evaluation adopts a learning, improvement and strengths-based approach;
- That evaluation supports innovation, accepting that projects will learn and evolve;
- That evaluation contributes to the creation of a culture of evaluation and evaluative thinking;
- That there is no one or preferred data collection method rather the most appropriate qualitative and quantitative methods will be tailored to the information needs of each project.

#### CO-DESIGN

Co-design is a process and approach that is about working with people to create 'interventions, services and programs which will work in the context of their lives and will reflect their own values and goals'<sup>3</sup>. Co-design can be done in many ways but is about collaborative engagement that is bottom-up, creative, and enables a wide range of people to participate and importantly to steer decisions and outcomes. Co-design is not a consultation process but a partnership approach where

---

<sup>3</sup> VCOSS (2015). *Walk alongside: Co-designing social initiatives with people experiencing vulnerabilities*. V. C. o. S. Service. Melbourne.

'end-users' actively define and shape strategies and outcomes. The role of the 'expert' is to facilitate this process.

## 8.2 EVALUATION METHODOLOGY

The evaluation of the project utilised a variety of data collection tools in a mixed methods approach providing information about process, outcomes, impact and capacity building. Qualitative and quantitative data was collected and analysed as described below.

### QUANTITATIVE DATA

#### Existing Data Analysis

Existing survey data was gathered from an Errinundra to Snowy district health care professional in the role of a remote area nurse, who conducted the survey to assess the service needs of the community in the region. The anonymous survey contained ten questions and collected basic demographic details as well as information relating to services currently attended, costs and travel. The survey also collected information related to preferences for service delivery, perceived service needs and gave respondents the ability to provide open text responses regarding why they live in the area and potential reasons for relocating away from the area.

#### Community Survey

The community survey was co-designed in collaboration with CERG, DVICG and ESCRC. The survey design:

- Allowed for the collection of information from a defined group of stakeholders
- Enabled a large amount of data to be collected quickly.

The survey was distributed by DVICG and ESCRC. The survey had a combination of multiple choice, Likert scale and open-ended questions.

### QUALITATIVE DATA

Semi-structured interviews were held with 11 who participants indicated their interest in taking part in individual interviews in the survey. Semi-structured interview questions were designed to guide the researcher to capture all desired information while providing flexibility for the participant to elaborate on their experience (see Appendix 1).

#### Data Analysis

A thematic analysis technique was used for the qualitative data with findings presented under theme headings together with participant quotes. The thematic analysis utilised Braun and Clarke's six step process which included familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report (Figure 25)<sup>4</sup>.

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<sup>4</sup> Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101. ISSN 1478-0887.

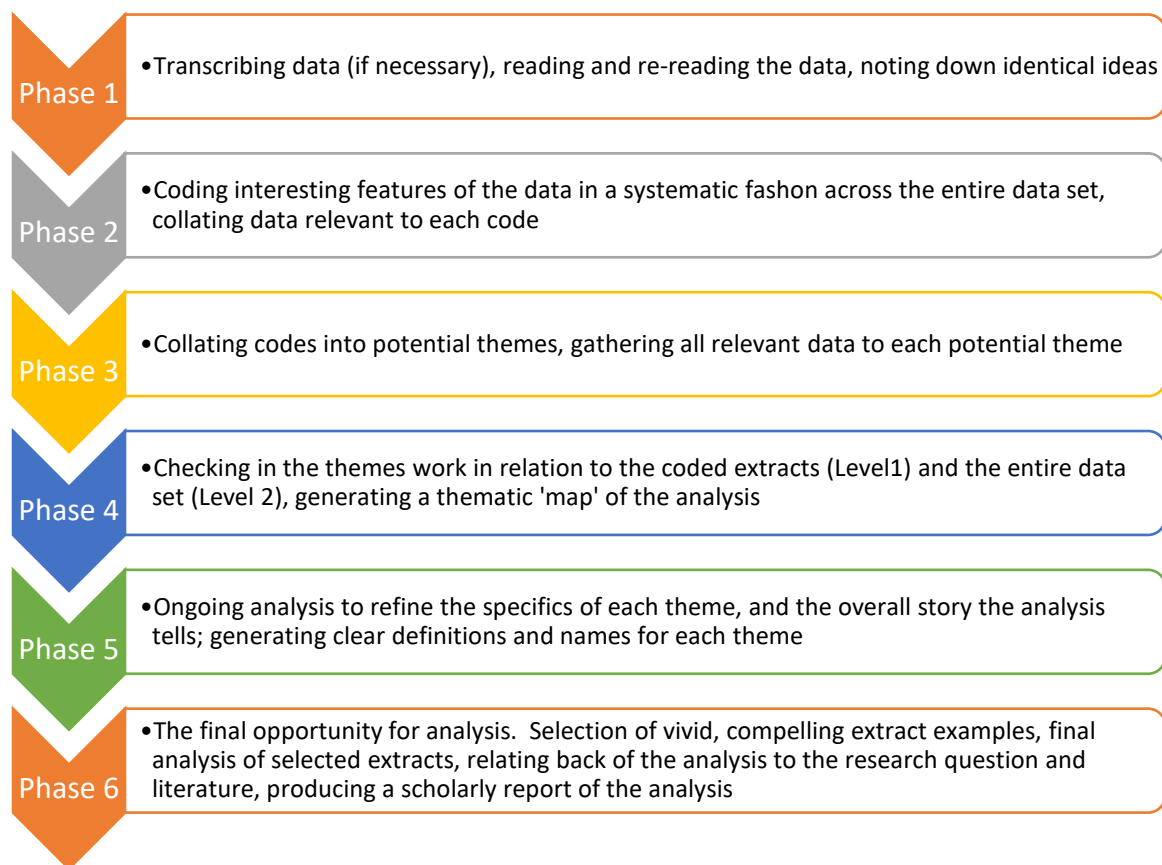


Figure 26: Six Step Thematic Analysis

As qualitative analysis is an inductive process, some interpretation of the data was required to create the thematic map. It was actively acknowledged that the researcher’s interpretations would inform the results of this study, hence, any prior conceptions of the topic were reflexively bracketed to the best of the researcher’s abilities<sup>5</sup>.

<sup>5</sup> Berger, R. (2013). Now I see it, now I don't: Researcher’s position and reflexivity in qualitative research. *Qualitative Research*, 15(2), 219-234. <https://doi.org/10.1177/1468794112468475>

## 9. ETHICAL APPROVAL AND PRACTICE

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Federation University aims to promote and support responsible research practices by providing resources and guidance to our researchers. We aim to maintain a strong research culture which incorporates:

- Honesty and integrity;
- Respect for human research participants, animals and the environment;
- Respect for the resources used to conduct research;
- Appropriate acknowledgement of contributors to research; and
- Responsible communication of research findings.

Human Research and Ethics application, *Evaluation of the Remote Health Solutions for Isolated Far east Gippsland Communities Project (A22-032)*, was approved by Federation University Human Research Ethics Committee (Appendix 1) prior to data collection and analysis. Consent to participate in the study and for participant's de-identified transcripts to be used for research and evaluative purposes was obtained via signed informed consent forms before commencing interviews. Participant anonymity was maintained by removing any identifiable information from the evaluation.

## 10. ABBREVIATIONS

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CERG	Collaborative Evaluation & Research Group
DVICG	Deddick Valley Isolated Community group
ESCRC	Errinundra to Snowy Community Recovery Committee
FRRR	Foundation for Rural and Regional Renewal
Gippsland PHN	Gippsland Primary Health Network
GP	General Practitioner
HNA	Health Needs Assessment
HREC	Human Resources and Ethics Committee
NSW	New South Wales



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## Appendix 1: Community Participant Interview Questions

### **BUILDING HEALTH AND RESILIENT COMMUNITIES THROUGH SERVICE EQUITY**

#### **COMMUNITY INTERVIEWS: QUESTIONS**

- Can you please tell me a bit about yourself and where you live?
- How do you access health services?
- What works well?
- What would you like to see improved about the health services in your community?
- What advice would you give to the policy makers about health service delivery in your community?

## Appendix 2: Federation University Human Research and Ethics (HREC) Approval

<b>Principal Researcher:</b>	Associate Professor Joanne Porter	
<b>Co-Researcher/s:</b>	Ms Naomi Byfieldt Ms Megan Jackson	Val Prokopiv
<b>School/Section:</b>	<b>School of Health</b>	
<b>Project Number:</b>	<b>A22-032</b>	
<b>Project Title:</b>	<b>Evaluation of the Remote Health Solutions for Isolated Far East Gippsland Communities Project.</b>	
<b>For the period:</b>	11/05/2022 to 11/05/2027 (standard 5-year project approval has been introduced)	

*Quote the Project No: A22-032 in all correspondence regarding this application.*

**Comments:** The HREC note that there is still no evidence of consent by respondents to the “existing” survey that their responses can be used in future research (i.e. in this project). Approval for this the project has been granted, excluding the use of existing data from previous community surveys, so the research can begin. The Committee recommend an amendment submission, with the relevant information, to add the use of existing data.

Approval has been granted to undertake this project in accordance with the comments and proposal submitted for the period listed above.

Please note: It is the responsibility of the Principal Researcher to ensure the Ethics Office is contacted immediately regarding any proposed change or any serious or unexpected adverse effect on participants during the life of this project.

In Addition: Maintaining Ethics Approval is contingent upon adherence to all Standard Conditions of Approval as listed on the final page of this notification.

### **COMPLIANCE REPORTING DATES TO HREC:**

Annual project report:

**11 May 2023**

**11 May 2024**

**11 May 2025**

**11 May 2026**

Final project report:

**11 June 2027**

**A final report must be submitted within six months of the project completion, which may be prior to the date noted above. Submission of a final report will close off the project.**

The combined annual/final report template is available at:

[HREC Forms](#)



Fiona Koop

**Coordinator, Research Ethics**

**11 May 2022**

## Remote health solutions in isolated Australian communities: an integrative literature review

### Introduction

The Australian landscape is unique, with the vast majority of the country classified by Australian Standard Geographical Classification System as 'Very Remote' (Remote area [RA] 5) (Department of Health [DoH], 2016). As rurality increases, so do negative health outcomes for communities and individuals, including decreased life expectancy, lack of access to primary care services and higher rates of risk taking behaviours such as smoking and alcohol consumption (Australian Institute of Health and Welfare [AIHW], 2019). Isolated Australians are more like to experience low socio-economic

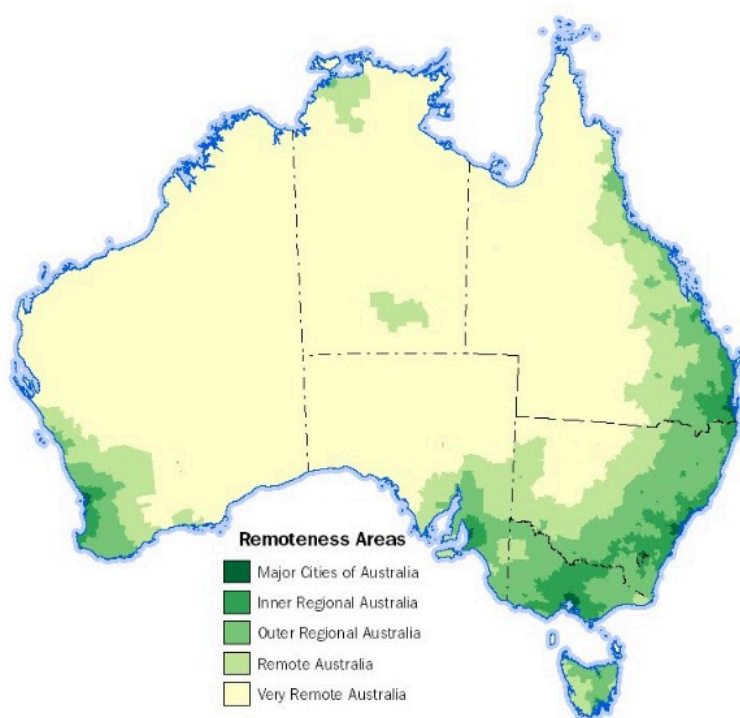


Figure 1. MAP OF THE 2016 REMOTENESS AREAS FOR AUSTRALIA.

Australian Bureau of Statistics [ABS]. (2016). Map of the 2016 remoteness areas for Australia. Available from: Remoteness Structure

chronic understaffing and a lack of adequate skills to cover all facets of care including specialist care and medication management (McCullough et al., 2021).

Although isolated Australian communities face many challenges in health service delivery, this can foster innovation (DoH, 2016). Telehealth has been proposed as one option to help solve barriers in relation to distance and access to care in an appropriate and timely manner. A comprehensive review of the Australian telehealth landscape was undertaken by Bradford et al. (2016) to determine what makes a telehealth service sustainable. A total of six key factors were identified in developing a feasible and sustainable service including having a clear vision, having onus on the service, being adaptable, transparent economics, efficiency in service provision and equipment to provide the service (Bradford et al., 2016). Implementing this service, however, is not without its challenges. As described by Liaw and Humphreys (2006), the rural eHealth paradox outlines how although isolated Australian communities are most likely to benefit from telehealth solutions, they are the least likely

status due to poor access to employment, income and education, contributing to an overall poorer health status (AIHW, 2019). There are a number of factors that may increase negative health outcomes in rural and remote communities including inadequate resources, infrastructure challenges, health workforce staffing challenges and funding issues (AIHW, 2019; McCullough et al., 2021; Moffatt & Eley, 2011). Due to long-standing training programs and funding structures, there is a disproportionate level of health care professionals available in rural and remote communities compared to metropolitan counterparts (DoH, 2016). This in turn, adds more pressure on remote services and local health care practitioners. Nurses in rural and remote communities battle against societal expectations to provide comprehensive care despite

to have the appropriate infrastructure, workforce and funding to facilitate the service (Liaw & Humphreys, 2006).

With the changing landscape of healthcare delivery across Australia due to the COVID-19 pandemic, timely investigation was required into the current and future provision of care for rural and remote isolated communities.

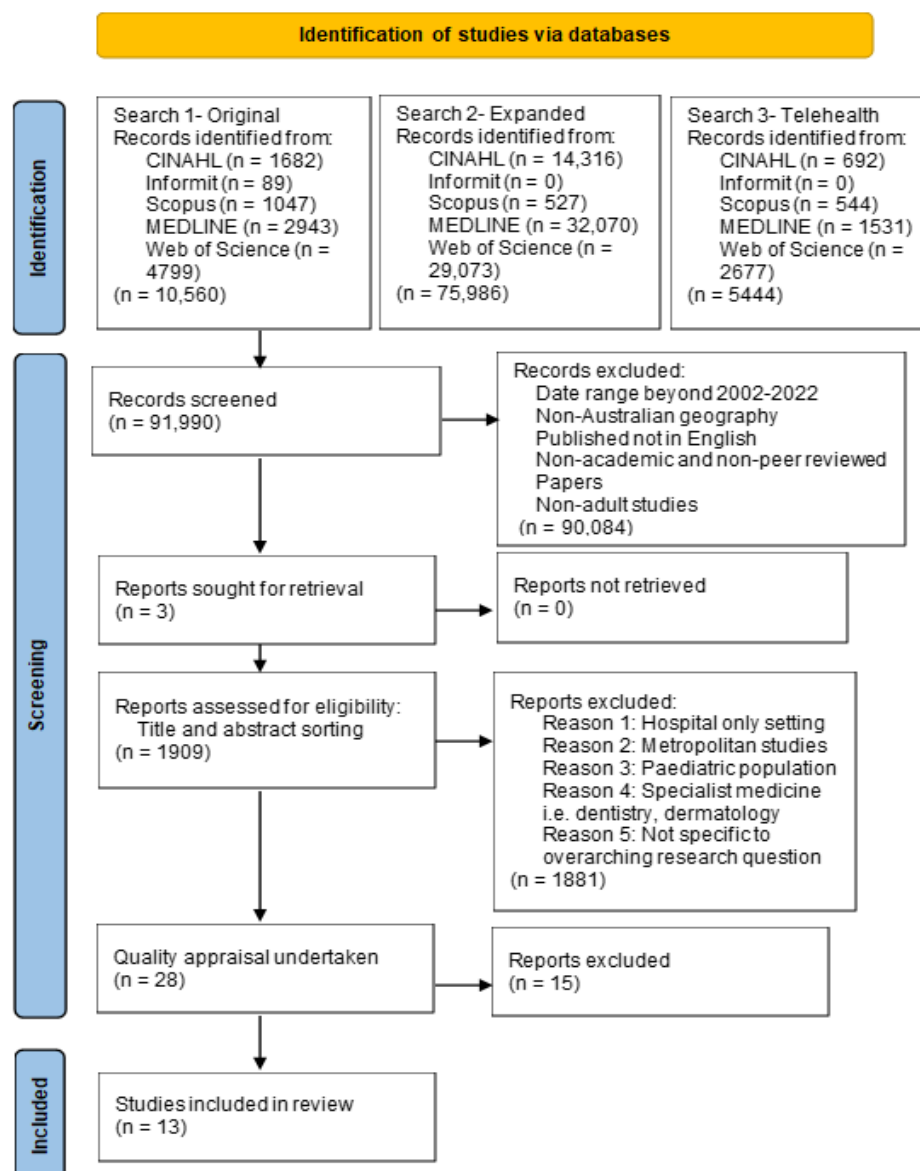
## **Methods**

The aim of the review was to investigate the factors that influence the feasibility and sustainability of health service provision in rural and remote communities in Australia, identifying the models of care, barriers, enablers and potential workforce solutions for isolated regions. The review was guided by a number of research questions, including ‘what is the most appropriate health service delivery model for rural and remote communities?’ and ‘what is the most feasible and sustainable telehealth model of care for rural and remote communities?’.

The review followed an integrative approach, outlined by the Joanna Briggs Institute (JBI) manual for evidence synthesis (Lizarondo et al., 2020). A convergent integrated approach was determined most appropriate as within this framework, quantitative, qualitative and mixed methods studies are all employed to answer the review questions (Lizarondo et al., 2020). The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines, JBI critical appraisal tools and the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018; Joanna Briggs Institute [JBI], 2020; Page et al., 2021) were used in the search, evaluation and collation of findings for the review.

A total of five databases were utilised in three similar searches, expanded to answer all aspects of the review questions. CINAHL Complete, MEDLINE, Web of Science, Informit and Scopus (Elsevier) were utilised in the search, with papers accepted up to May 2022. Outlined in the PRISMA flow chart (Figure 1) 91,990 papers were screened from three similar searches. A number of inclusion and exclusion criteria were applied in the screening phase of the search, leaving 1,909 papers available for title and abstract sorting. This process was assisted by the framework of the existing inclusion and exclusion criteria, with 28 papers undergoing quality appraisal by the research team. From appraisal, thirteen papers remained for inclusion in the final review.

Figure 1. PRISMA flow chart



### Key findings

A total of thirteen papers were included in the final review. The included studies had been undertaken in most states and territories across Australia, with exception of Western Australia and the Australian Capital Territory. One study did not specify rural and remote location (Wade & Elliott, 2012). Papers were published from 2010 to 2019, with no papers available since the emergence of the COVID-19 pandemic. Extracted data from the publications included theme/subtheme, article citation, location of study, aim of study, study methodology, key findings and limitations (Table 1). Two overarching themes were outlined from the review findings, feasibility and sustainability. Papers allocated to the feasibility theme outlined models of care that were appropriate for isolated communities, and the barriers and enablers impacting service provision. Papers allocated to the theme of sustainability outlined long term, innovative and place-based services or initiatives for rural and remote communities. Workforce options were highlighted here, as well as costs associated with different workforce options.

**Table 1. Summary of findings**

Theme/subtheme	Citation	Location	Aim	Methodology	Key Findings	Limitations
<b>FEASIBILITY</b>						
<b>Telehealth model</b>	Cherry et al. (2018).	QLD, Australia.	To review the use of The Royal Flying Doctor Service (RFDS) medical chest program in QLD and evaluate changing healthcare needs of isolated Australians.	Quantitative	Medical chests located in 3000 isolated Australian communities, stocking medications and medical supplies. Facilitated by telehealth consultation with RFDS clinicians.  3936 items dispensed from medical chests with 20,707 telehealth consults conducted.	Comparison data and chest content data missing when analysing two time periods in the medical chest program use.
<b>Telehealth model</b>	O'Hara and Jackson (2017).	Remote North-West QLD, Australia.	To understand the experiences of the clients, allied health professionals (AHPs) and students in using telehealth.	Mixed methods	90-minute telehealth assessment facilitated by AHPs and students. Positive response from both clients and facilitator team. 8 out of 10 participants would use again due to convenience.	Lack of detail on study data analysis. Possible bias from student and AHPs experience of service.
<b>Telehealth model</b>	O'Sullivan et al. (2019).	VIC, Australia.	To explore the use of video conferencing (VC) for specialists who also provide outreach services.	Mixed methods	57% of specialists used VC for some aspect of their care in outreach. 43% thought it took longer than face-to-face appointments. Supported non-complicated care and reduced outreach visit frequency.	Small scale study. Specialist receiving outreach subsidy may impact uptake. VC used infrequently.
<b>Mobile screening model</b>	Lesjak et al. (2010).	Broken Hill, NSW, Australia.	To evaluate the feasibility of a mobile screening service for abdominal aortic aneurysm (AAA) in remote Australia.	Mixed methods	Successful in screening 60% of eligible men, on par with other national campaign engagement. Demonstrated feasibility in mode of service delivery. Positively received by clients.	Sole focus on AAA screening may impact finding generalisability. Cost modelling not reported.
<b>Barriers &amp; enablers</b>	Alam et al. (2019).	Western Downs, south-east QLD, Australia.	To investigate the current and future predictors of eHealth service access in regional Australia.	Quantitative	78% of households had access to eHealth services. Barriers to access included low socio-economic status, low education, and remote location. Enablers were middle age, larger households, digital literacy, and broadband internet access.	Small geographic location impacting generalisability. Lack of control group and study of causality.



<b>Barriers &amp; enablers</b>	Cosgrave et al. (2018).	Rural and remote NSW, Australia.	To investigate how employment and rural-living factors impact turnover intentions of early career community mental health professionals.	Qualitative	Turnover identified in core categories of personal and professional expectations being met and social process of adjusting to change.	Lack of representation from broader health care professionals and regions. Recall bias in retrospective study.
<b>Barriers &amp; enablers</b>	Wade and Elliott (2012).	Australia.	To investigate the role of the telehealth 'champion' in uptake and sustainability of telehealth services.	Qualitative	Telehealth 'champions' (clinical, management, academic and technical) were successful due to relationship building, enthusiastic promotion of telehealth service and acting as legitimators. Barriers were 'champion' moving on or losing interest in the project.	Lack of detail in study methods and location. Lack of definition on emergence of the term 'champion'.
<b>Barriers &amp; enablers</b>	Terry et al. (2015).	Rural Tasmania, Australia.	To investigate rural community nurse's workplace health and safety issues and the impact on care provision.	Qualitative	Key themes included geographical (distance driven, worker isolation), physical (client behaviours and conditions) and organisational factors (workloads, burnout, violence vertically and horizontally).	Lack of generalisability. Authors state phone interview method may have decreased depth and quality of interviews.
<b>SUSTAINABILITY</b>						
<b>Workforce</b>	Heidelbeer and Carson (2013).	Remote NT, Australia.	To assess the use of non-resident healthcare labour force when addressing barriers to recruitment and retention of staff.	Qualitative	Benefits of model outweighed negatives. 'Block' work schedules increased work/life balance of staff, decreased expectations on living conditions and enjoyed higher remuneration.	Small sample size with lack of representation of younger health care worker population.
<b>Workforce</b>	Hungerford et al. (2016).	Rural/remote Australia.	To test and develop connections between theory of nursing models and the practice of the nurse practitioner (NP), developing a community-based clinic NP model.	Qualitative	NPs met local health gap in a timely and cost-effective manner. Challenges included financial viability, lack of understanding of NP role and staffing.	Limited generalisability in case study design.
<b>Workforce &amp; cost-effectiveness</b>	Kelly et al. (2017).	Southern Coastal VIC, Australia.	To investigate how NPs overcome service deliver gaps in isolated, socially disadvantaged Australian communities.	Mixed methods	87% would see NP again and recommend to others. Cost effective, faster, quality service. NP rebate=\$17.85 compared to a GP rebate=\$37 for same appointment time.	Lack of detail provided in cost analysis. Authors state comparison to similar studies difficult due to survey design.

<b>Workforce</b>	O'Meara et al. (2012).	4 rural regions in south-eastern Australia.	To identify the evolving practice of rural paramedics, outlining the Rural Expanded Scope of Practice (RESP) model.	Qualitative	Expanding the role of the paramedic to reduce pressure on emergency departments and decrease doctor call outs. Increased preventative health care in communities. Some blurring of professional boundaries, upskilling required.	Inclusion in study required willingness from services, with potential for only higher quality services opting in. Services were, however, varied.
<b>Workforce</b>	Panzer et al. (2016).	Far north QLD, Australia.	To describe the stages of a regional healthcare workforce planning process.	Qualitative	Stage 1: Map population needs assessment, Stage 2: Remodel and design appropriate health service model, Stage 3: Workforce redesign and innovation, Stage 4: Develop a workforce and training plan.	Lack of representation from non-healthcare professionals. Restructure may have impacted decision making. Success depending on stability of funding bodies.

## Feasibility

Within the first theme of feasibility, three telehealth models (Cherry et al., 2018; O'Hara & Jackson, 2017; O'Sullivan et al., 2019) and one mobile screening model (Lesjak et al., 2010) were introduced. Among the telehealth models, provision of technology, usage, client and professional perspectives were outlined. An innovative program by the Royal Flying Doctor Service (RFDS) of a medical chest system was discussed, with chests located in approximately 3,000 isolated Australian communities. The chest contents of medications and medical supplies are dispensed via telehealth consult with RFDS clinicians (Cherry et al., 2018). Uptake of telehealth services by specialists attending outreach services was outlined by O'Sullivan et al. (2019) with videoconferencing services appropriate for uncomplicated care, reducing need for outreach appointments. Client's experiences were positive for the use of telehealth assessment, citing convenience as a major benefit (O'Hara & Jackson, 2017). Although dedicated to a specific health concern of abdominal aortic aneurism (AAA), the mobile screening model was well received. Uptake of the service was on par with other national health screening campaigns at 60% engagement (Lesjak et al., 2010). Barriers and enablers to appropriate health service provision were outlined under the theme of feasibility. Enabling factors that promoted rural and remote health service delivery from a workforce perspective included implementing a telehealth 'champion' (Wade & Elliott, 2012). This 'champion' was enthusiastic, fostered interprofessional relationships and legitimised the role (Wade & Elliott, 2012). From a community perspective, enabling factors to accessing care included access to internet services and digital literacy (Alam et al., 2019). Barriers to effective healthcare service provision from a workforce perspective included occupational health and safety concerns in geographical location, physical factors and organisational factors (Terry et al., 2015). Additional workforce barriers included professional and personal expectations and the social process of adapting to change in a new role (Cosgrave et al., 2018). Barriers to accessing appropriate care from a community perspective were outlined by Alam et al. (2019) with low socio-economic status, low education levels and increased rurality as factors for consideration.

## Sustainability

Factors associated with longevity of health service provision in isolated Australian communities was outlined in the second theme, sustainability, with a number of workforce options presented. Two papers outlined nurse practitioner models of care (Hungerford et al., 2016; Kelly et al., 2017), while a non-resident workforce and an upskilled paramedic workforce were also introduced (Heidelbeer & Carson, 2013; O'Meara et al., 2012). The nurse practitioner models of care were highlighted as being able to fill a medical gap in service delivery, it was fast and convenient to access and more cost effective (Hungerford et al., 2016; Kelly et al., 2017). When exploring a non-resident workforce option, participating health care workers stated the benefits outweighed the negatives associated with isolated work (Heidelbeer & Carson, 2013). Health care workers stated the 'fly-in-fly-out' schedule meant they had more autonomy over their off-work time, improving their work life balance. Family schedules and commitments were uninterrupted, and workers had less expectations on their living conditions and resources as they knew their work schedule was temporary (Heidelbeer & Carson, 2013). An alternative model to the nursing workforce was outlined by O'Meara et al. (2012) with an extended role for the rural paramedic. The Rural Expanded Scope of Practice (RESP) model was introduced, encouraging community engagement, traditional emergency response, situated practice and championing primary healthcare (O'Meara et al., 2012). In the development of an appropriate, place-based rural and remote health service, appropriate planning with key stakeholders is vital when addressing sustainability. Four stages of workforce planning were outlined by Panzera et al. (2016), with adequate gap analysis, design of service, innovation in workforce solution and ongoing training

and evaluation key to a well-designed workforce model. Collaborative stakeholder engagement in this process as a clinical reference group was highlighted as crucial in developing a holistic model (Panzera et al., 2016).

## **Discussion and Recommendations**

Health service provision in rural and remote Australian communities has been identified as complex. Historic issues that have impacted service delivery in isolated areas were outlined in this review, with infrastructure challenges, resource constraints, workforce recruitment and retention issues and cost concerns well documented.

It was identified in this review that a telehealth or mobile model of care may best support isolated community needs. These models provided a faster, more cost effective and appropriate service based on health trends within the communities (Cherry et al., 2018; Lesjak et al., 2010; O'Hara & Jackson, 2017; O'Sullivan et al., 2019). In a cost analysis performed by Thaker et al. (2013), a cost saving of implementing a telehealth oncology consultation service across multiple sites was approximately \$320,000. This included savings from patient and specialist travel, aeromedical retrievals, equipment and staffing (Thaker et al., 2013). A notable feature for the identified telehealth and mobile models was the presence or facilitation of service by a health professional. Clients accessing the services outlined were not required to attend the service without the support of a health care professional, highlighting that their presence may assist in the appropriate delivery of care.

Although inclusion in this review was limited to rigorous methodology, a key resource available to communities and clinicians looking to facilitate telehealth delivery is Telehealth Victoria Community of Practice (2017-2022). This Victorian State Government initiative provides a hub for professionals to learn how integrate and deliver telehealth services across their services. The hub fosters collaboration and networking to produce best outcomes for services and clients (Telehealth Victoria Community of Practice, 2017-2022). Another identified government supported initiative of note implemented in Western Australia is the Emergency Telehealth Service (ETS). This service is facilitated by the Western Australia Country Health Service and has shown benefit to isolated communities, connecting patients to emergency care remotely (Western Australia Country Health Service, 2021).

This review may have been limited by the inclusion of Australian only studies, potentially missing beneficial models of care and workforce solutions implemented on a global scale. It was identified however, that with the uniqueness of the Australian geography, barriers and enablers may have differed too greatly with the inclusion of international studies. By undertaking a local review, this allowed for deeper exploration of local innovations.

A dearth of recent literature exists on feasible and sustainable healthcare solutions for isolated Australian communities. No literature was available post the 2020 COVID-19 pandemic, identifying a gap in the rural and remote health landscape within Australia. COVID-19 fostered innovation in health care delivery, using telehealth to prevent unnecessary contact that could spread the virus, providing safe care in uncertain times (Centers for Disease Control and Prevention [CDC], 2020). Although born out of necessity during the pandemic, further exploration of telehealth since the emergence of the pandemic may encourage innovation for isolated Australian communities.

## **Conclusion**

Isolated Australian communities face a number of challenges in regard to accessing safe and appropriate healthcare compared to their metropolitan counterparts. Long-standing issues of inadequate infrastructure, unstable workforce provision, cost and time taken to access care all

contribute to a decreased life expectancy for rural and remote Australians. Factors of feasibility and sustainability need to be addressed when designing an appropriate, place-based service. This review introduced models of care that have been trialled in isolated communities, outlining the barriers and enablers that make or break these models. Long-term success of implemented models was explored, analysing workforce options and costs associated with service implementation. Telehealth and mobile models were identified as potentially the most appropriate service provision within isolated communities, with further investigation required post the COVID-19 pandemic to better understand the evolving landscape of post-Covid access to healthcare.

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